Evaluation of USF Project: Comprehensive Assessment for Tracking Community Health: Information Technology Initiative

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I. INTRODUCTION

The purpose of the Comprehensive Assessment for Tracking Community Health: Information Technology Initiative (CATCH-IT) project was to create a warehouse for health related data for use in the state of Florida. The warehouse would be used to store these data and produce automated reports for use in health planning activities throughout the state. Prior to this project, data were stored in many separate files, then compiled, analyzed and reported via a labor-intensive and costly manual process. Few counties had access to these data for the planning of health services when the manual process was in place.

The first year of the project was spent on the technological aspects of designing and constructing the data warehouse and loading and staging the data. Data for approximately 150 health status indicators were obtained for all 67 Florida counties for a five-year period, from multiple public data sets and sources. These data were used to populate the warehouse. Reports were designed to meet the anticipated needs of the various health planning agencies, based on the team's earlier, manual versions of the report.

Years two and three were devoted to meeting with our project advisory group, producing reports, conducting field tests, evaluating results, and to making revisions to warehouse design and report formats. The purposes of the field test were to 1) determine if reports that met the needs of health planning agencies could be produced in an automated fashion utilizing the data stored in the warehouse; 2) determine if more than one report could be produced simultaneously, maintaining the high standards for quality and accuracy of data; and 3) determine whether one automated, standardized report would meet the needs of counties throughout the state with different characteristics (urban versus rural, differing populations, etc.).

The next section is a detailed description of the project technology and process used to create the data warehouse. Following that is a two-phase evaluation: Phase I evaluates the process used; Phase II is an in-depth review of the reports generated by the warehouse.

II. PROJECT DESCRIPTION

The project description includes a brief overview of data warehousing technology, providing background information. Subsequent sections concentrate on three major technical aspects of the project: the design process, data staging, and the dissemination of results. First, the ongoing design activity is discussed. The initial project meetings led to a prototype fairly quickly, but the process of refining and enhancing the data warehouse has continued throughout the project. One of the biggest challenges has been loading the various data sets and transforming them for use in the CATCH reports and other research initiatives. This data staging process is outlined along with the associated data quality issues. Lastly, the dissemination strategies are discussed. The initial goal of the project was to automate the existing CATCH methodology, but accessing the data warehouse through dynamic interfaces provides a powerful new capability that we are just beginning to explore.

It is important to note that nearly all of the data warehouse development tasks were accomplished by graduate students. Due to a loss of partner funding, we did not hire the full-time technical staff originally anticipated. The field test sites made up the funding shortfall, but placed much greater demands on early report results. The data warehouse had to be built and quickly brought into operation to meet actual reporting needs. The continual use of the data warehouse for real report production left less time for design and development work, but did lead to several enhancements through the feedback of real end-users. The cadre of graduate students worked well, balancing the demands of graduate studies and the occasional graduation with data warehouse production work.

Data Warehousing Technology

Major goals of a data warehouse include the support of decision-making activities and the creation of an infrastructure for ad-hoc exploration of very large collections of data. Decision-makers should be able to pursue many of their investigations using data browsing tools, without relying on database programmers to construct queries. The emphasis on end-user data access places a premium on an understandable database design that provides an intuitive basis for navigating through the data. The dimensional model has been recognized as an effective structure for organizing many data warehouse

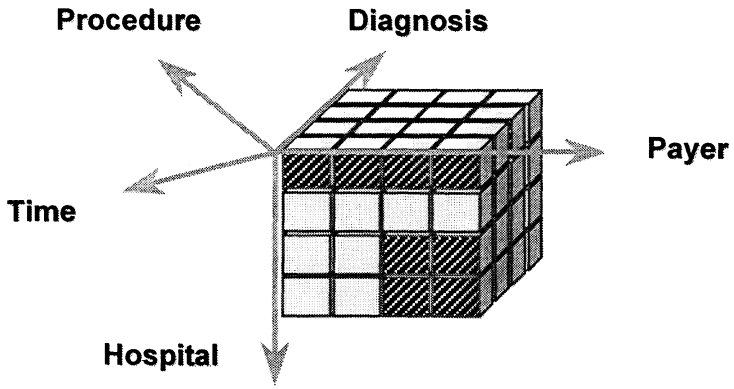


Figure 1: A Hospital Discharge Cube

components [Inmon 1996, Kimball 1996, Gray and Watson 1998]. The dimensional model can be represented as a data cube, with numeric facts populating the cube and many dimensions that can be used to slice through the underlying data. Figure 1 shows an example data cube based on hospital discharge data drawn from the CATCH health care data warehouse project [Studnicki et al. 1997]. The hospital discharge data includes numeric information such as length of stay, wait times, and revenue breakdowns [Berndt et al. 1998]. The HOSPITAL dimension will be used throughout the paper as a motivating example.

In the relational database model, a data cube is "flattened" and represented as a star schema. A star schema is characterized by a center fact table, which contains numeric information that can be used in summary reports. Radiating from the fact table are dimension tables that provide a rich query environment. For example, the dimensions in Figure 1, such as HOSPITAL, PROCEDURE, and TIME would form separate dimension tables linked with the central fact table containing numeric hospital discharge information. This structure provides a logical data cube, with specific dimension records identifying a set of numeric measurements within the fact table.

Fact Tables

The most appropriate facts are *additive* numeric data items that can be summed, averaged, or combined in other ways across the dimensions to form summary statistics. The only way to compress the millions of data points to produce a reasonably sized answer set is to present some mathematical summarization. No human will want thousands, let alone millions, of items in answer to their queries. As Kimball [1996] points out, "the best and most useful facts are *numeric*, *continuously valued*, and *additive*." For example, our health care data warehouse includes facts such as counts of hundreds of different health events, population-based rates, age-adjusted rates, and even fine-grained financial data in the case of the hospital discharge data depicted in Figure 3. Through a query on the hospital discharge star, it is possible to focus on a list of hospitals (using the HOSPITAL dimension table), select a single disease (using the DIAGNOSIS dimension table), and investigate how the length of stay has varied over a specified time period. Using the hierarchical nature of the dimensions, it is also possible to roll-up to compare types of hospitals, disease categories, or even patient age bands. While the dimensional structure is simple and readily understandable, it supports a large and very useful universe of queries.

Dimension Tables

The dimensions define the query environment; the richer the set of dimensions the more ways the data can be cut in queries. Two of the important characteristics of dimensions are the richness of the attributes that describe the dimension and the hierarchical nature of the dimension. For example, in Figure 2 the BEDS attribute of the HOSPITAL dimension is used to form a hierarchy, where

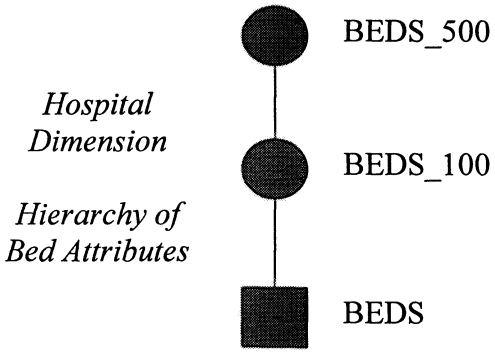


Figure 2: A Hospital Bed Hierarchy

groupings by 100 and 500 bed increments are implemented. This would allow the queries outlined above to organize the answer set by grouping hospitals by bed size. The hierarchy in Figure 4 is represented using a dimension hierarchy diagram [Berndt 1999], with each possible grouping as a separate level. These separate levels can be easily denormalized to enhance query performance. The dimension hierarchies enable roll-up and drill-down operations that control the level of detail in queries. These formally defined hierarchies also provide the framework for navigation or data browsing tools.

Design Process

The first challenge was to begin meeting as an interdisciplinary research team. Researchers from the Colleges of Business and Public Health met repeatedly, discussing both the health care issues and data warehousing technologies necessary to complete the project. One of the first objectives on the technology side was to present the fundamental issues in data warehousing technology (see above). During our first meetings, the central topics of dimensional modeling and star schemas were presented. This provided a foundation for the initial design activities. Data warehousing projects are usually evolutionary in nature, so the focus was finding "low-hanging fruit" for a prototype. Enhancements could be added incrementally as the team gained experience with the project.

Several major data sets were identified during the initial meetings and preliminary data warehouse designs were proposed. For example, the hospital discharge information was a very large data set that would prove useful in deriving a host of useful health status indicators. The hospital discharge data is used to calculate indicators such as avoidable hospitalizations, which are among the types of data deemed appropriate for community assessment. However, the discharge transactions themselves can provide the flexibility for deeper analysis. For instance, the number of different procedures performed, volume estimates for institutions or integrated delivery systems, length of stay, and a fine-grained breakdown of charges are all possible targets of queries against this data warehouse component. Florida hospital discharge transactions are collected by the Agency for Health Care Administration (AHCA) from the more than 200 short-term acute care hospitals in the state. These hospitals report every discharge transaction, regardless of payor, throughout the state. Figure 3, is a partial diagram of the star schema for the hospital discharge data and was one of the early components of the data warehouse.

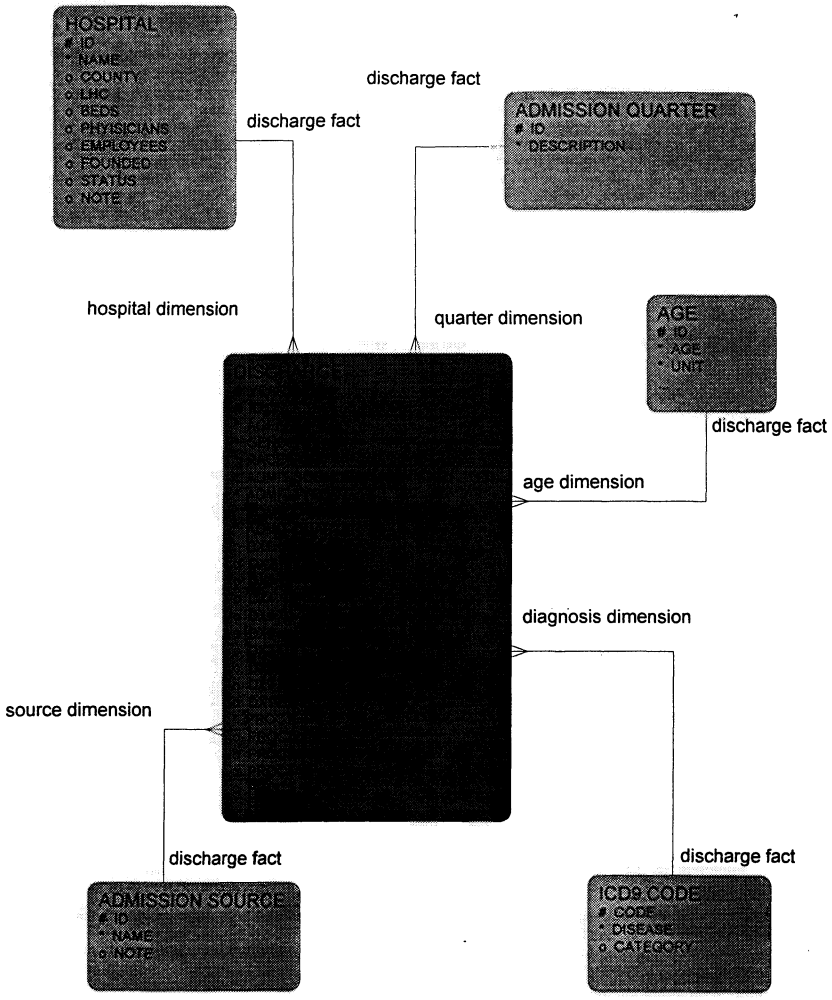


Figure 3: The Hospital Discharge Star

As noted in the section on data warehousing technologies, the dimension tables provide the richness for queries. The development of these dimensions has been an ongoing activity. For example a set of important dimensions characterize both diagnoses and procedures. Figure 4, illustrates one such crucial dimension based on the International Classification of Disease (ICD) codes. Currently, we are using version 9, or ICD-9, codes as the low-level dimension. These codes are divided into chapters and sections, which provides a natural hierarchy for the codes. The hierarchical structure is shown using separate tables, but these tables can be easily denormalized to enhance query performance. In addition, several other tables depict the more complex organization of this important dimension. Other important dimensions include patient age, gender, mortality risk, and severity of illness, making this a particularly rich query environment.

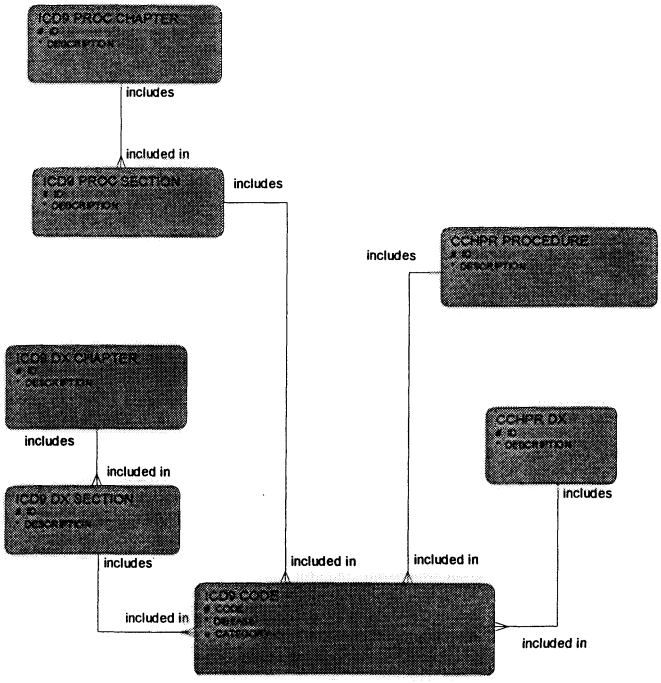


Figure 4: The ICD Dimension

The initial design meetings were used to identify several star schemas that have remained important throughout the project. The early designs proceeded easily in part because of the strong guidance derived from the decade-long field experience handcrafting community assessment reports. The well-tested CATCH methodology provided a concrete set of requirements for our design team. As the project has continued to progress, new components are incorporated into the data warehouse. The interesting aspect is that at a certain point the synergies between components started to provide capabilities beyond our initial goals. In fact, the data warehouse continues to spark new and interesting avenues for our research.

A unique aspect of our data warehouse is the large number of health care indicators that need to be calculated from the large data sets. Identifying these indicators and documenting them in metadata was another design challenge. While some indicators are straightforward to calculate, others require procedures to combine data from different areas. An ongoing challenge has been to create stored procedures in the data warehouse for handling hundreds of such calculations. In fact, these procedures are among the most important assets in the data warehouse since they capture many aspects of the expertise gained through extensive health care field experience. Again, designing and developing these procedures has been an ongoing effort.

Data Staging and Quality

The need to maintain data quality is a major concern in a data warehouse project. The mission of decision support means that poor data quality can lead to poor decisions. A

worst-case scenario is the retraction of data that has already been used for important queries and associated decision-making activities. Therefore, data quality and cleansing, ensuring the accuracy, consistency, and timeliness of data, are critical to the success of a data warehouse project. Publishing is a useful metaphor for this aspect of data warehousing. The pain of retracting published material is commensurate with the difficulties of retracting data in a warehouse environment.

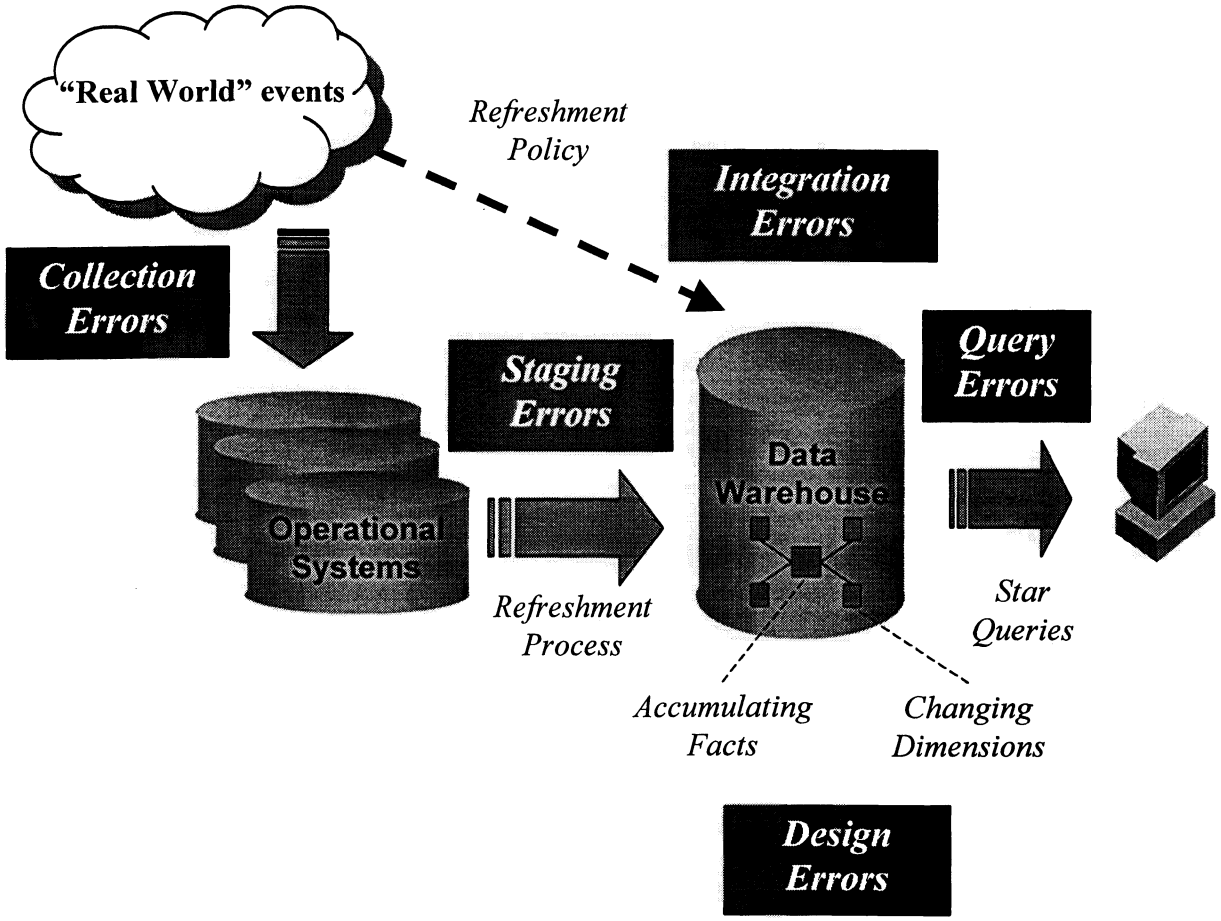


Figure 5: Sources of Data Warehouse Errors

In general, there are five points of entry for errors that threaten data warehouse quality, corresponding to the five phases of data processing from source acquisition to query delivery as shown in Figure 5.

1. *Design or conformation errors*, such as incompatible units, mixed data granularity, precision, scope, depth, coherency, and other factors, are fundamental flaws. While it may be expected that most design errors are likely to be identified during initial loading and testing, the highly evolutionary nature of many data warehouse implementations makes them particularly vulnerable to design errors as structural changes are made with less rigorous review and testing.
2. *Data collection errors* are particularly troublesome since data warehouses usually rely on others to initially capture and store data. Incorrectly recorded values, mixed records, dropped data points or fields, incorrect units,

inconsistent standards, and untimely collection practices may all contaminate the data with scant evidence of error. In some cases, data warehousing projects can provide the focus and justification for improving these 'up-stream' data collection processes.

3. *Data staging errors* can be introduced into clean source data through mishandling of the loading process. Invalid or incomplete extraction queries, improper transformation processes, and truncated loading operations can all be sources of error.
4. *Data integration errors* can be introduced as key linkages between facts and dimensions are made. Data warehouses differ sharply from conventional databases in that reality is not recorded, but rather assembled. That is, in a data warehouse, the model of the real world is composed of many disparate 'data snapshots' which are linked together at the time facts are loaded into the warehouse. Failure to properly align these snapshots, either through incorrect identification of the appropriate dimension or incorrect temporal alignment, due to recording time disparities, may result in invalid data representations in the data warehouse.
5. *Query errors* are introduced through improper query formation or misplaced expectations. The query interface is where user perceptions regarding data quality are formed, even though errors can be introduced in all the previous steps. Perceptions of usefulness, believability, and their constituent factors are all influenced by the query interface.

A quality assurance strategy for health care data warehouses must assess, monitor, and, ultimately, prevent these five types of data errors. We use several effective techniques to provide a thorough level of quality assurance in our health care data warehouse.

First, the early reports were produced in parallel. That is, the data warehouse was used to generate the reports, but hand calculations were used to verify nearly all the data. This gave the team confidence in the final product and allowed us to identify opportunities to automate data quality procedures.

A wide variety of data quality procedures continue to be developed in the data warehouse. These procedures allow us to monitor many aspects of data quality, using the power of the warehouse itself. In fact, some of the important historical data led our team to identify different types of temporal errors, which are being investigated as part of new research project.

Among the most error prone aspects in data warehousing are the data collection and staging activities. Since our data warehouse is based on many publicly available data sources, many issues regarding quality are outside our control. Therefore, we developed new staging processes that allowed us to verify much of the data. These processes were implemented using programming languages such as AWK, as well as database-resident procedures. This so-called twin star staging process has been published in the IT literature and is a unique quality assurance tool. These techniques allowed us to load much of the data and ensure a high-level of quality. However, as noted above, there are hundreds of stored procedures the take this raw data and convert into indicators for reporting. The results of these calculations also need to be verified and that process has been largely accomplished by manual checks of the data. The development of automated

procedures for checking the final indicator calculations is still an outstanding issue. We have identified several innovative approaches, but still need to implement many of these procedures.

Even though most data warehousing books stress the difficulties encountered during data staging, this aspect of our project was unexpectedly challenging. Many of the large data sets were new to both the technical and health-oriented researchers since the previous reports used mostly pre-summarized data published in traditional formats. In the data warehouse, we wanted to retain as much fine-grained data as possible so that we could calculate health status indicators in flexible ways. Therefore, the whole team needed to become more familiar with all the major data sets and necessary transformations that would be critical in the data warehouse environment. It took a lot longer than expected to develop these data loading processes and come to understand the idiosyncrasies of the data sets.

Dissemination Strategies

The mission of the CATCH data warehouse is to support the automated and cost-effective application of the CATCH methodology, as well as to enable more detailed analyses that were not possible using the coarse-grained data that typified past CATCH reports. In order to meet these goals, the data warehouse design includes several levels of data granularity, from the coarse-grained data used in generic report production to actual event-level data, such as hospital discharges. The data warehouse includes major components at three levels of granularity, as illustrated by the data access pyramid in Figure 6.

1. Reporting tables with highly aggregated data are used to support the core CATCH reports, including comparisons between a target county and peer counties. These tables also provide fast response for interactive access via data browsing tools and can provide the foundation for simple community-wide Internet access.
2. There are families of star schemas that provide true dimensional data warehouse capabilities, such as interactive roll-up and drill-down operations. These components have carefully designed dimensions that can be utilized by more sophisticated data browsing tools. The star schemas are populated using thorough data staging and quality procedures that usually involve processing detailed data sets extracted by various health care agencies and organizations. Typically, the data is aggregated and transformed for loading into a family of related star schemas that share important dimensions and support interactive online analytic processing (OLAP) techniques.
3. For certain types of information, the design calls for retaining very fine-grained or even event level data. An example is the hospital discharge data that includes each hospital discharge event for the more than 200 hospitals that are mandated to report such information in Florida. This data is retained at the transaction level because of the rich set of facts and dimensions available for analysis and the density of potential aggregations that result in negligible space savings.

These three levels of aggregation within the data warehouse combine to meet a wide range of reporting requirements and performance goals. Thus providing a flexible basis for disseminating health care information to community decision-makers.

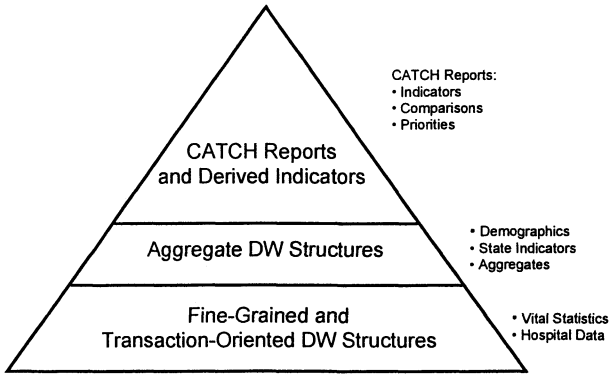
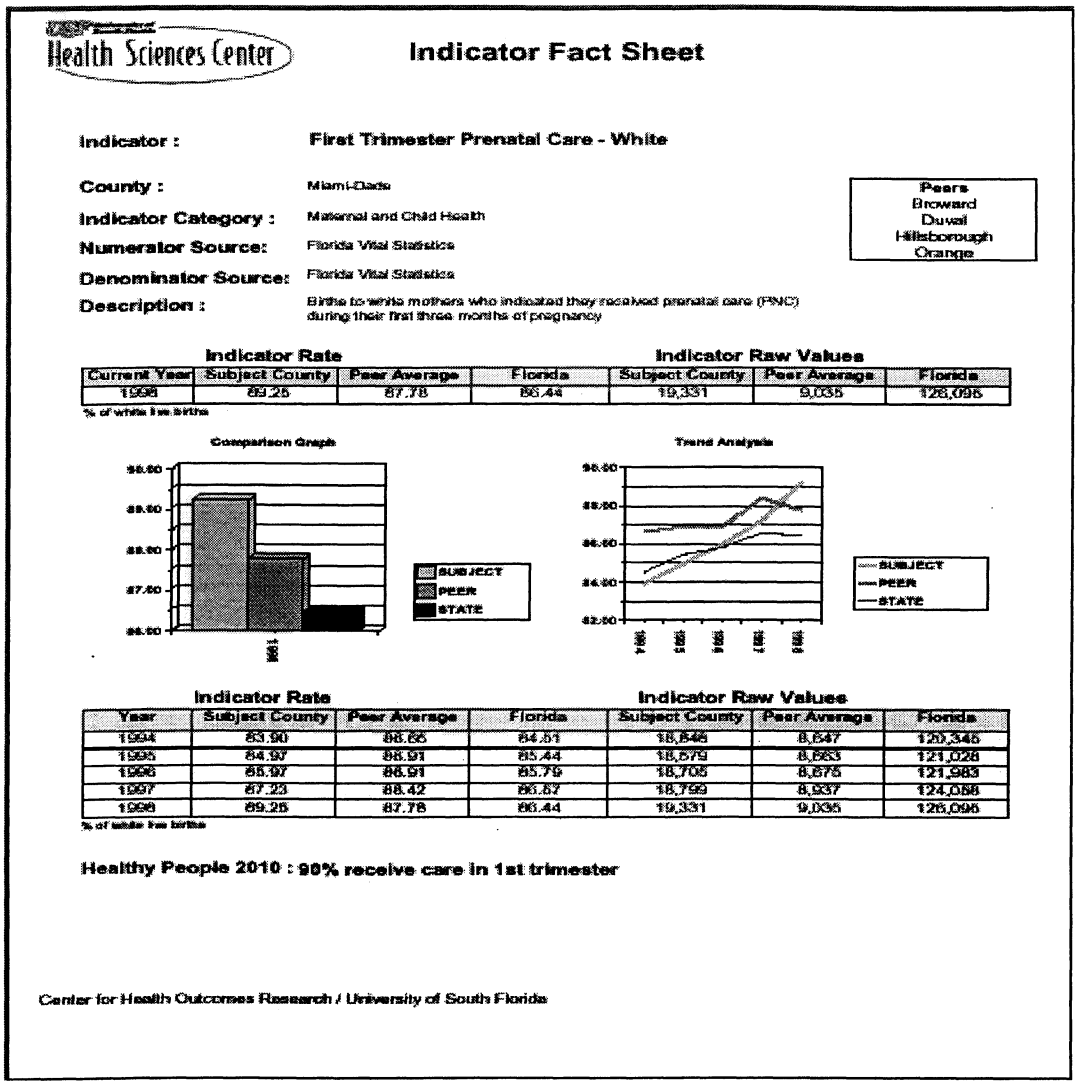


Figure 6: The Data Access Pyramid

Drawing information from the top of the pyramid is the basis for the traditional CATCH reports. An example fact sheet from such a report is show in Figure 7. Each fact sheet reports the latest annual data and comparisons with the state and peer community values, as well as historical trend information. Hundreds of these sheets are automatically generated for each report using the data warehouse. The design for these sheets began with the previous handcrafted reports, with a process of continual improvement with each new report. In addition, a structured evaluation was used to collect end-user feedback on the report format (see subsequent sections). The IT graduate students developed skills in various database reporting tools and were able to realize most of the desired report designs.



Health Sciences Center

Indicator Fact Sheet

Indicator : First Trimester Prenatal Care - White

County : Miami-Dade

Indicator Category : Maternal and Child Health

Numerator Source: Florida Vital Statistics

Denominator Source: Florida Vital Statistics

Description : Births to white mothers who indicated they received prenatal care (PNC) during their first three months of pregnancy

Peers
Broward
Duval
Hillsborough
Orange

Indicator Rate

Current Year	Subject County	Peer Average	Florida
1998	89.25	87.78	86.44

Indicator Raw Values

Subject County	Peer Average	Florida
19,331	9,035	126,096

% of white live births

Comparison Graph

Trend Analysis

Indicator Rate

Year	Subject County	Peer Average	Florida
1994	83.90	86.66	84.51
1995	84.97	86.91	85.44
1996	85.97	86.91	85.79
1997	87.23	88.42	86.87
1998	89.25	87.78	86.44

Indicator Raw Values

Subject County	Peer Average	Florida
18,848	8,647	120,345
18,579	8,663	121,026
18,706	8,675	121,983
18,799	8,937	124,088
19,331	9,035	126,096

% of white live births

Healthy People 2010 : 90% receive care in 1st trimester

Center for Health Outcomes Research / University of South Florida

Figure 7: An Example Fact Sheet

In addition to the static report formats, the data warehouse allowed us to develop dynamic delivery mechanisms. Online analytic processing (OLAP) tools were central to this effort. Figure 8 depicts such a tool being used to access the fine-grained hospital discharge data at the lowest level of the pyramid. Though this technology was not used extensively in the field work, this dynamic technology is certain to play an important role in the future of this project.

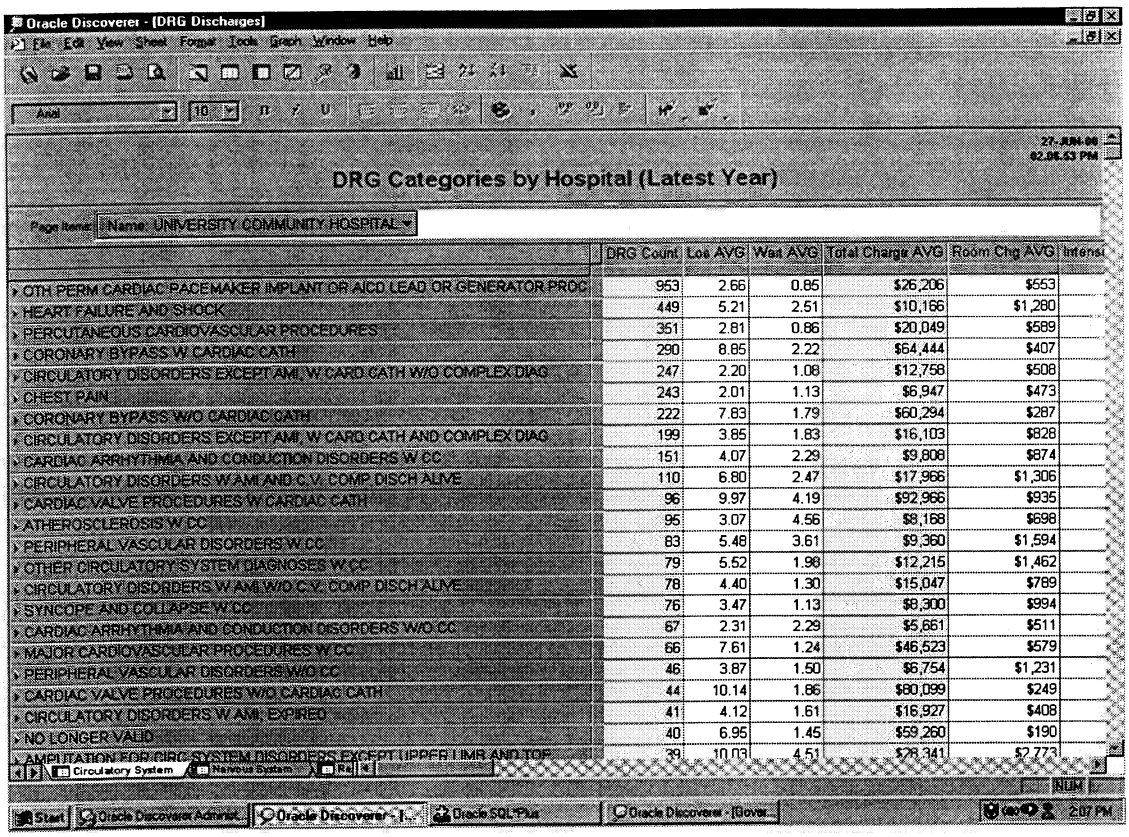


Figure 8: Dynamic Data Warehouse Access

III. EVALUATION – PHASE I – THE PROCESS

The project's main goal was to improve the decision-making ability of local health planners and thus improve health status through their use of CATCH data. The process we used to reach this goal was to design and create a data warehouse populated with health status data, which then gave us the capability to generate CATCH reports in an automated fashion as opposed to the manual process used previously. The result was speed and cost-effectiveness: we are now able to produce more reports per year for less cost than when the manual process was used. The ultimate outcome is that prioritized, peer-compared health status data needed for the planning of health services are now more widely available to those who need them in the State of Florida. In addition, with the knowledge gained in this project, we believe that this technology and process will be easily transferable to other states.

Next is a brief discussion of the challenges encountered during the TOP project, and the result of dealing with those issues. Following that is a list of the accomplishments during the project period. These issues are discussed more fully in the on-line report.

Barriers/obstacles/challenges:

- An unexpected shortfall of funds was experienced when the project partner did not honor a commitment to provide $281,000 in funding; field test sites were then asked to make financial contributions to the project. The positive outcome that resulted was that zip code analysis was added in order to satisfy customized report requests for the field test sites. The negative outcome was we were not able to produce 67 reports in year 2 of project as planned. This was purely a financial barrier; the technology was fully functional, but we lacked the ability to hire a full-time Oracle programmer. Another result from this challenge was our inability to complete the project in the original two-year timeframe; three years were required in all.

- The partnership relationship with the Florida Department of Health did not live up to our expectations; however, they provided partial data that was used to populate the warehouse.

- Lack of integrated space for Business and Public Health teams to work together: separate offices in separate buildings hampered efforts toward closer collaboration and slowed the process.

- Diversity of databases: this was unexpected on the IT side of the team. The learning curve required for programmers to adjust to diverse file layouts, different codebooks, and various source media was steep; this challenge was compounded by the turnover of student programmers.

Accomplishments:

- A data warehouse was designed and populated with enough health status, social and financial data to generate CATCH reports and conduct other health outcomes research, such as studies on the effect of procedure volume on clinical outcomes.
- More health planners had access to CATCH data during the TOP project than could have been served in the same time period using manual methodology.
- CATCH assessments will be more cost-effective in future applications based on the progress made during the TOP project.
- A website was developed (http://chor.hsc.usf.edu) for on-line viewing of searchable reports. This solved the problem of distribution costs and logistics for an approximately 400-page report to a seemingly endless number of end-users.
- Zip code level analysis was a serendipitous outcome resulting from the customized field test reports. The team strived to accommodate all reasonable requests from field test sites, which led to more creative results in reports.
- A state level report was developed, described to the project Advisory Group, and published in the article: Rating the Health Status of US Communities, published in this month's Managed Care Interface, November 2001, p. 43-51 (see publications packet for a copy).
- Through the progress made during the TOP project, the CATCH data warehouse now has the ability to accommodate a Bioterrorism Surveillance and Response System, which is part of our future plans.

Although changes were made in the project process along the way, the USF research team views this project as a success. The warehouse was created, populated, tested and used to produce CATCH reports which were favorably received by their end-users (this will be discussed at length in Phase II of the Evaluation). Applications beyond those originally planned have been identified and are in process now. Florida health planners have increased access to CATCH data, and Florida citizens are reaping the rewards of that more informed planning through improved health status (please see publicity packet for examples of how communities are using these data).

IV. EVALUATION – PHASE II – THE REPORTS

Unfortunately, the project experienced many changes from the original project plan due to loss of partner funding, as discussed previously. Therefore, changes were necessary in the evaluation plan as well. The evaluation of the project was originally planned to employ a focus group format exclusively in the field tests. However, we determined that a structured interview process, conducted in a limited number of sites supplemented by a mailed survey to remaining counties would be more effective in providing the detailed information needed to refine our report formats.

Methodology

The evaluation methodology for phase II of the evaluation is comprised of two components: 1) On-site field tests in 7 counties, and 2) a questionnaire that was mailed to the remaining Florida counties. These components will be presented separately.

The On-site field test

The on-site field test process included multiple steps: selection of test counties; development of a survey instrument for on-site use; working with a task force in each site to determine report parameters; generation of the county CATCH report; and finally the evaluation interview.

Field test sites were selected on the basis of the geographic location, willingness to participate in the field test, and ability to contribute financially to the project. This latter criterion was essential after the project lost $281,000 in funding due to default by the project partner. Seven counties were selected to participate: Hillsborough, Pinellas, Dade, Escambia, Santa Rosa, Leon and Hardee. Geographically they were dispersed throughout the state. We selected field test sites that ranged from very large, such as Miami-Dade County (population 2,098,350), to very small, such as Hardee County (population 23,204). Several of the field test sites were located on the coast (Escambia, Santa Rosa, and Pinellas Counties) thereby likely to feel the effects of tourism and seasonal migration, while others were inland (Hillsborough and Leon Counties) and less likely to experience seasonal fluctuation.

The research team designed the survey instrument to collect detailed feedback on the utility of each of the major sections of the CATCH reports:

1) the 'Factsheet', which contains all current and historical data for a single health indicator, including charts and graphs;
2) the 'Data Matrix', a tabular presentation of all indicators within a category;
3) the 'Indicator Comparison Chart', a 2 by 2 chart that illustrates how health problems relate to peer county values and state average values;

4) the 'Priority List', a rank ordering of all health indicators deemed problematic within a county;
5) and questions related to the selection and utility of the health indicators used in the report and questions about general report usefulness.

Examples of the On-site survey instrument and the handouts used during the interview process can be found in Appendix A.

In each field test site, a task force was established to work with the USF research team. This task force was comprised of leaders and employees of various health and social agencies involved in health planning, and we strived to have a broad-based, multi-agency group. The task forces helped determine the parameters of the study at each site, selecting indicators to be reported and criteria to be used for prioritizing health problems in their county. This interaction with the task forces served to develop a standardized list of indicators to report, but more importantly, it allowed the team to test the warehouse's ability to generate custom reports. After the report specifications were determined, USF student programmers wrote the code and procedures necessary to generate the report. Site visits were scheduled after the task force had received a report and a presentation explaining all aspects of the report. The process used was a group interview session, with discussion encouraged, and with respondents marking their answers on their surveys themselves. A USF team member recorded comments of the group, and the sessions were tape recorded, with permission of the participants.

The first on-site field test was conducted in November, 2000, held jointly with task force participants from Hillsborough and Pinellas Counties. The input from this group was by far the most rich and valuable, as both groups had received manual versions of the report previously, and they had worked with those reports over time. Participants in the field test had strong ideas about how to improve the report. The Miami-Dade County field test was held next, in February 2001. Miami-Dade provided the experience of developing reports for community level analysis (aggregated census tract data) as well as county level. The research team decided that many of the ideas that resulted from Hillsborough, Pinellas and Miami-Dade were so valuable, that the revisions were made to report formats prior to producing the next site's report.

Following Miami-Dade, the next sites visited were Escambia and Santa Rosa, again with joint task force participation. The advantages of interviewing two groups simultaneously were that the discussion became more like that of a focus group. These sites also provided valuable input on zip code level analysis, which will be included in all future reports.

Hardee and Leon Counties were interviewed individually, as they were not geographically contiguous. Again, the Leon site provided valuable insight on zip code level analysis. Hardee County presented the challenge of dealing with small numbers statistics, which can often be misleading. This field test required us to report some data in the form of five-year averages in order to report reliable statistics.

Each of the field test sites was provided with "custom" examples of reports. Revisions and improvements were made to each of the examples based on the feedback given in the previous field tests rather than delivering the exact same product to each site. This allowed for iterative refinement of the reports throughout the evaluation process. Ultimately, the team was able to collate all of the feedback gathered into a plan for report revisions that was suitable for the entire state. This feedback is reported in the Results section.

The Mailed Survey

Following the on-site surveys, the survey instrument was adapted for use in as a mailing to the remaining 60 Florida counties. The original plan called for an on-line survey, but the experience of the on-site field tests that an on-line survey would not be as effective. The mailed version allowed the participants to handle the reports and spend time with them. We also felt we would have a higher response rate with a mailing. Mailing was sent to Health Departments, which are primarily responsible for health planning functions in Florida.

The packet mailed included the following components: a letter addressed to the County Health Department Director, introducing the study, from Dr. James Studnicki of USF; a postcard with the name and phone number of the person who was to complete the survey for follow-up; a letter addressed to the survey respondent; a page of instructions entitled 'Overview'; the survey instrument; and a return envelope. The survey was estimated to require 30-40 minutes to complete. Examples of the mailing with all enclosures are found in Appendix B.

Results

On-site survey

Both quantitative and qualitative data were collected via the interviews. Quantitative data are arrayed in the tables below; qualitative data are summarized below, with detailed results provided in Appendix C.

The number of participants varied at each site interview, as seen in Table 1 below. Participants also varied by background; some were health department or hospital administrators and managers, others were employees of other health and social agencies. We found this mix of people to be productive in responding to the structured interview questions.

Table 1. Total Participants in the Structured Interviews by Field Test Site.

COUNTY	PARTICIPANTS
Hillsborough and Pinellas	11
Miami-Dade	4
Escambia-Santa Rosa	5
Leon	9
Hardee	4

Factsheets

Respondents identified the fact sheets as the most important component of the report. The fact sheets provide current and historical data available for a given indicator. An example of a Factsheet can be seen in Appendix B. Table 2 below illustrates the responses to questions regarding Factsheets.

A series of four questions related to the example of a Factsheet provided to the respondents (see Table 2). The majority of respondents felt that the data contained within Factsheet was useful, with 85% rating it 4 or better (on a scale form 1-5 with 5 being the highest value). This page proved to be the most popular of the entire CATCH report, as the user can see data for the latest year available, as well as five year trend data, in both tabulate and graphical format. Current comparative data earned a mean score of 4.24 (of a possible 5), and historical data was appreciated even more at 4.38. The vote to keep the Healthy People 2010 goal (a national standard) was overwhelmingly positive at 82%.

In this section, as all others to follow, participants made very specific comments and suggestions for changes to the report format, symbols, colors, etc., as well as more substantive feedback about the content, such as labeling and definitions, information to add or delete, or spelling out acronyms. These comments are found in Appendix C: Summaries of Qualitative Data.

Table 2. Factsheet Questions – On-site interviews.

	Response Scale 1-5					Total Score	
	1	2	3	4	5		
Question	N (%)	N (%)	N (%)	N (%)	N (%)	Mean	Std. Dev.
How useful is the:							
Factsheet information?	0(0)	0(0)	4(12%)	17(50%)	12(35%)	4.24	0.66
Comparative data?	1(3%)	0(0%)	6(18%)	13(38%)	14(41%)	4.15	0.93
Historical data?	1(3%)	0(0%)	3(9%)	11(32%)	19(56%)	4.38	0.89
Is the Healthy People 2010 goal useful?	28(82%)	3(9%)	1(3%)	NA	NA	1.16	0.45

1. Scale for questions 1-3: Likert scale 1-5, where 1= not useful, and 5 = very useful.
2. Scale for question 4: 1 = yes, 2 = no, 3 = somewhat.

Indicator Comparison Charts

A series of questions on the interview form related to the indicator comparison charts. These charts are often called 2 by 2 charts by the USF team, as they have four quadrants illustrating where the subject county value sits in relation to the peer counties and the state average. Gold stars adorn those indicators that compare favorably to peer and state; red flags highlight problem indicators. An example is in Appendix A.

Table 3 illustrates the results in this section. Fifty percent of respondents gave this chart the highest rating (5) for usefulness, with a mean score of 4.24. A slightly lower mean score was earned for clarity of symbols and labeling. While reaction has been positive to the gold stars and red flags, the USF has struggled to establish meaningful symbols for the in-between categories (value favorable to peer, but unfavorable to state, etc.) Unfortunately, these interviews did not yield any viable suggestions.
The question about the Data matrix revealed ambiguous feelings about its utility, with a lower mean score of 3.94. Some participants shared the opinion that this page is redundant, revealing no information that cannot be found on other pages, such as the Factsheet or Indicator Comparison chart. However, other participants favored its existence to continue because its purpose is to array data by category (such as all Maternal Child health indicators on one page) which is useful in some planning settings.

Table 3. Indicator Comparison chart and Data Matrix questions.

	Response Scale 1-5					Total Score	
	1	2	3	4	5		
Question	N (%)	N (%)	N (%)	N (%)	N (%)	Mean	Std. Dev.
7. How useful is the four-quadrant chart	1(3%)	1(3%)	4(12%)	11(32%)	17(50%)	4.24	0.99
8. Are the symbols & Labeling clear?	0(0%)	3(9%)	5(15%)	11(32%)	14(41%)	4.09	0.98
10. Is the data matrix useful?	1(3%)	0(0%)	6(18%)	20(59%)	7(21%)	3.94	0.81

Scale for questions 7, 8 and 10: Likert scale 1-5, where 1= not useful, and 5 = very useful.

Priority List

Questions about the Priority List were concerned with whether the list itself was useful, and which of two types of array were preferred. Although this table is considered by the team to be the single most important in the report, the usefulness was rated lower than some of the other charts reviewed. Reasons given for this during discussion included the fact that the scores were confusing, as participants were unable to follow the calculations from which they derived.

Priority List 1, where indicators are ranked inside categories, was more highly favored than Priority List 2 (no categories, just rank ordered problems) by participants, as seen in

Table 4 below. However, in discussion, several people suggested that both are useful in different settings and both should be kept.

Table 4. Priority List questions.

	Response Scale 1-5					Total Score	
	1	2	3	4	5		
Question	N (%)	N (%)	N (%)	N (%)	N (%)	Mean	Std. Dev.
12. Is the priority list useful?	1(3%)	2(6%)	12(35%)	8(24%)	10(29%)	3.73	1.07
13. Is the priority list by category useful?	1(3%)	2(6%)	7(21%)	9(26%)	12(35%)	3.94	1.09
14. Is the non-categorized list useful?	4(12%)	3(9%)	8(24%)	6(18%)	9(26%)	3.43	1.38
15. Prefer categorized or non-categorized list.	10(29%)	4(12%)	14(41%)	2(6%)	NA	2.27	1.01

Scale for questions 12-14: Likert scale 1-5, where 1= not useful, and 5 = very useful.
Scale for question 15: 1 = Preferred categorized, 3 = preferred non-categorized, 3= Both, 4 = Neither

General Questions: Indicators and Overall Report

The final set of questions dealt with less specific issues of the report and its general utility. The indicators (as a set) were seen to be very useful "4 or 5" by 76% of participants. Fewer saw the indicator list as complete, with a mean score of 3.97. The indicator list was never meant to be exhaustive. Instead, it focuses on the most meaningful indicators currently available in all Florida counties in public databases. But each participant can be counted on to have their own 'wish list' of indicators, depending on their field of interest. The USF team's goal is to continue to populate the warehouse with meaningful indicators as collection and storage of data improves within the primary data sources.

Category titles were generally seen as useful, with a mean score of 4.32. However, newer, provisional data was not favored as highly. This topic generated much discussion in the group interviews. Participants wanted both complete, accurate data, but also data that is as new as possible. Group consensus ultimately was that data quality could not be compromised; that supported the USF policy of generally not using provisional data to populate the warehouse.

The report got a high overall rating for usefulness in supporting health planning efforts, with a mean score of 4.24. This will be discussed more in the Conclusions section.

Table 5. General questions: Indicators and Overall Report.

	Response Scale 1-5					Total Score	
	1	2	3	4	5		
Question	N (%)	N (%)	N (%)	N (%)	N (%)	Mean	Std. Dev.
16. Are the health indicators in the report useful?	0(0)	0(0)	4(12%)	13(38%)	13(38%)	4.30	0.70
17. Is the set of health indicators complete?	0(0%)	2(6%)	4(12%)	16(47%)	7(21%)	3.97	0.82
18. Are the indicator category titles useful?	0(0%)	1(3%)	2(6%)	14(41%)	14(41%)	4.32	0.75
19. Is newer provisional data more useful than older, more complete data?	4(12%)	2(6%)	8(24%)	11(32%)	5(15%)	3.37	1.25
20. Is the report useful for the health planning efforts?	1(3%)	0(0%)	2(6%)	17(50%)	13(38%)	4.24	0.83

Scale for questions 16-20: Likert scale 1-5, where 1= not useful, and 5 = very useful.

Mailed Survey

Surveys were mailed to 60 counties; 29 were returned, a 48.3% return rate. Follow-up with non-responders was limited, as it appeared participants that misunderstood the postcard purpose; few returned it, and many who did sent it with their survey.

Respondent Characteristics

Respondents were not asked to provide their name or county, but an examination of postmarks on return envelopes revealed a widespread geographic sample throughout the state. Participants were asked to give their job title or primary responsibility; 55% were Director of the Health Department; 10% were Epidemiologists; 21% were Nursing Administrators or Supervisors; 10% were Health Educators, and only 1 (3%) held the title of Health Planner. Health planning is mostly accomplished in group settings, with multiple personnel from multiple agencies participating, so the respondent mix is not surprising. The average number of years in this type of position was 16 years. All but one of the 29 respondents was directly involved in health planning in some mode, either through leadership or membership in various task forces, committees, coalitions or Boards responsible for health planning.

General Questions and Indicators and Overall Report

In general, survey respondents were satisfied with the list of indicators provided in the CATCH reports. A majority (69%) rated the indicators a 5 on a scale of 1-5, with 1 being least useful and 5 being most useful. Regarding completeness of the indicator list, 31% gave it a rating of 5, and 41% rated it a 4. As we continue to populate the data warehouse with additional indicators, satisfaction with the selection will hopefully rise in the future.

Just over half (52%) felt the indicator category titles (Demographics, Socioeconomics, Physical/Environmental Health, Sentinel Events, etc.) were useful in terms of understanding which indicators would be available in this category. These categories are under consideration for change by the research team at this point in time.

Respondents were also asked to consider whether newer data (of a more recent year), which was also provisional (not guaranteed complete or accurate by its primary source) would be preferable to older, more accurate data. The mailed survey results indicate a higher percentage of respondents (45%) preferring these newer, provisional data than we saw with the on-site field test participants, who preferred the certainty of the older accurate data before making resource allocation decisions. Table 6 illustrates the statistics for each question.

Table 6. General questions: Indicators and Overall Report.

	Response Scale 1-5					Total Score	
	1	2	3	4	5		
Question	N (%)	N (%)	N (%)	N (%)	N (%)	Mean	Std. Dev.
Are the health indicators in the report useful?	0(0)	0(0)	1(3%)	8(28%)	20(69%)	4.64	0.55
Is the set of health indicators complete?	0(0%)	3(10%)	5(17%)	12(41%)	9(31%)	3.93	0.96
Are the indicator category Titles useful?	0(0%)	1(3%)	2(7%)	11(38%)	15(52%)	4.36	0.77
Is newer provisional data more useful than older, more complete data?	0(0%)	4(14%)	3(10%)	8(28%)	13(45%)	4.07	1.09

Scale for questions: Likert scale 1-5, where 1= not useful, and 5 = very useful

Factsheets

Table 7 below illustrates the responses to questions regarding Factsheets. Usefulness of Factsheet information was rated a 5 by 55%, with a mean score of 4.46. Current comparative data was rated as either a 4 or 5 by 82% of respondents and historical data was rated 4 or 5 by 79%. The Healthy People 2010 Goal (a national standard) was an overwhelming favorite, with 86% rating it useful.

Table7. Factsheet Questions.

	Response Scale 1-5					Total Score	
Question	1 N (%)	2 N (%)	3 N (%)	4 N (%)	5 N (%)	Mean	Std. Dev.
How useful is the:							
Factsheet information?	0(0%)	1(3%)	1(3%)	10(34%)	16(55%)	4.46	0.74
Comparative data?	1(3%)	0(0%)	3(10%)	12(41%)	12(41%)	4.20	0.91
Historical data?	0(0%)	0(0%)	3(10%)	9(31%)	14(48%)	4.41	0.69
Is the Healthy People 2010 goal useful?	25(86%)	2(7%)	NA	NA	NA	1.07	0.27

Scale for first 3 questions: Likert scale 1-5, where 1= not useful, and 5 = very useful.
Scale for question 4: 1 = yes, 2 = no, 3 = somewhat.

Indicator Comparison Charts

An example of an Indicator Comparison Chart can be seen in Appendix B. This chart allows the user to quickly identify health indicators whose values are worse than the peer county values or state values. Two questions were posed to participants, as shown in Table 8. The chart's usefulness in identifying problem indicators had a mean rating of 4.0 (standard deviation 0.98). Clear labeling and symbols was given a 4 or 5 rating by 62% of respondents.

Table 8. Indicator comparison chart questions.

	Response Scale 1-5					Total Score	
Question	1 N (%)	2 N (%)	3 N (%)	4 N (%)	5 N (%)	Mean	Std. Dev.
How useful is the four-quadrant chart	1(3%)	1(3%)	3(10%)	13(45%)	8(28%)	4.00	0.98
Are the symbols & Labeling clear?	3(10%)	1(3%)	4(14%)	9(31%)	9(31%)	3.77	1.31

Scale for questions: Likert scale 1-5, where 1= not useful, and 5 = very useful

CONCLUSION

The USF team believes that both the on-site field tests and mailed surveys were successful in providing information that they team needed to evaluate its project outcome and improve the 'product'. Most of the detailed feedback supplied by study participants

has already been used to make substantive changes to the reports. The feedback will be used in the future as some issues remain yet unresolved but continue to be addressed.

As mentioned in the Results section, the report got a high overall rating for usefulness in supporting health planning efforts. In discussion, participants reiterated that although they do have access to a lot of health related data, none is in as usable a format as the CATCH report, where hundreds of indicators are compiled, peer-compared and prioritized for easy use in health planning activities. The groups were unanimous in their desire to have a CATCH report for their county annually. That continues to be a USF team goal as well. Our work with the data warehouse will continue at the USF Center for Health Outcomes Research. CATCH reports are only one of the benefits that can result from the data warehouse. We have begun to populate the warehouse with physician data, which paired with the clinical data currently in the warehouse will result in studies of the effect of volume on patient outcomes. Environmental data will be loaded soon to look at the effects of toxins in the environment on the health of communities. We also have the capability within the warehouse to develop a system for bioterrorism alerts. Many possibilities exist for the data warehouse to continue to serve the health planning and health outcomes research needs of our Florida communities well into the future, and the Center is seeking grants and partnerships to continue this successful work.

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APPENDIX A

ON-SITE SURVEY INSTRUMENT AND HANDOUTS

Technologies Opportunities Program (TOP) Project
Field Test of Automated CATCH Report

I. Fact Sheet questions

	Not Useful				Very Useful
1. How useful do you find the information on this page?	1	2	3	4	5
2. How useful do you find the current comparative data?	1	2	3	4	5
3. How useful do you find the historical (trend) data?	1	2	3	4	5

4. Is there anything you would add or eliminate from the descriptive information at the top of the page?

_____

5. Is a national standard or goal such as the Healthy People 2010 goal useful?

_____

6. Do you have any other comments about this page?

_____

II. Peer/State Comparison charts (2x2s)

	Not Useful				Very Useful
7. How useful is this chart with its four quadrants?	1	2	3	4	5
8. Do you find the symbols and labeling clear?	1	2	3	4	5

9. Any other comments about this report (page)?

_____

_____

III. Matrix questions

	Not Useful				Very Useful
10. Do you find this matrix useful?	1	2	3	4	5

11. Are there other items you would like to see on this page? Items you would remove? Or any other comments about this page?

_____

_____

IV. Priority List Questions

	Not Useful				Very Useful
12. Is this priority list table useful?	1	2	3	4	5
13. Is it useful to have the indicators prioritized by category (as in Priority List #1)?	1	2	3	4	5
14. Is it useful to have the indicators prioritized from highest score to lowest score (as in Priority List #2)?	1	2	3	4	5

15. Would you prefer to see Priority List #1 or #2 in future reports?

_____

_____

V. General questions

	Not Useful				Very Useful
16. The health indicators in the report were useful.	1	2	3	4	5
17. The set of health indicators is complete.	1	2	3	4	5
18. The category titles are useful; they make it easy to understand which indicators would be available in that category.	1	2	3	4	5
19. Newer data are sometimes available on a provisional basis (but data are not guaranteed to be clean or complete). Would newer provisional data (e.g., 1 year old data) would be more useful than final data (e.g., two years old, but clean and complete).	1	2	3	4	5
20. This report would be very useful in local health planning efforts.	1	2	3	4	5

21. Are there any other indicators you'd prefer to see? Where would you obtain these data?

_____

22. Are there any indicators you would delete from the report?

_____

23. Have you ever received prioritized health data from another source?

_____

24. When you first looked at the report on your own, were you able to find what you expected to in the report?

_____

25. What is your general impression of the report?

_____

26. What do you like the most about the report?

_____

27. What did you like the least about the report?

_____

28. Do you consider the data contained in this report timely?

_____

29. How do you think you might use this report?

_____

30. Who do you think are the potential users of this report in your local area?

_____

_____

31. Are there any indicators you might want to see in a time frame other than annually (quarterly, monthly. etc.)?

_____

_____

32. Do you have any other comments about any aspect of the report?

_____

_____

USF Comprehensive Assessment for Tracking Community Health (CATCH) Field Test

- Project funded by the U.S. Department of Commerce, Technology Opportunities Program (TOP), project began in 1998
- Automates manual CATCH process via the development of a data warehouse and automated report generation
- CATCH prioritizes a community's health problems utilizing peer-compared data

CATCH OVERVIEW

- **Ten indicator groups organize over 200 health and social indicators:**

Demographics	Social/mental health	Sentinel Events
Socioeconomics	Physical/Environmental	Health Resources
Maternal/Child	Health Status	Behavioral Risk Factors
Infectious Disease		

- **Three Comparison Values:**

County	Peer average	State average

- **Peer Selection Criteria:**

% under age 18	% families with children < age 18 in poverty
% over age 64	% nonwhite population

- **Comparison Table Format (2x2s):**

Favorable Peer, Favorable State	Favorable Peer, Unfavorable State
Unfavorable Peer, Favorable State	Unfavorable Peer, Unfavorable State

- **Prioritization Process**

Number Affected	Availability of an Intervention
Economic Impact	Trend Direction and Magnitude
Magnitude of Difference	

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Indicator Fact Sheet

Indicator : AIDS Cases - Incidence ☆

County : Hardee

Indicator Category :	Infectious Disease
Numerator Source:	Public Health Indicators Data System, CD ROM
Denominator Source:	Florida Governor's Office, on-line
Description :	The number of NEW cases of AIDS in a year, per 100,000 population
Calculation:	Total new cases of AIDS/total population x 100,000

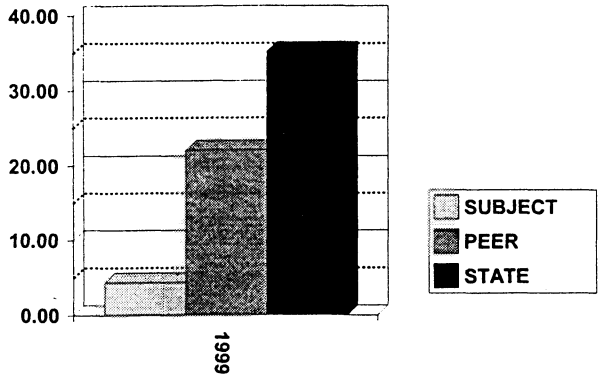
Peers
Gilchrist
Okeechobee
Holmes

Indicator Rate / Indicator Raw Values

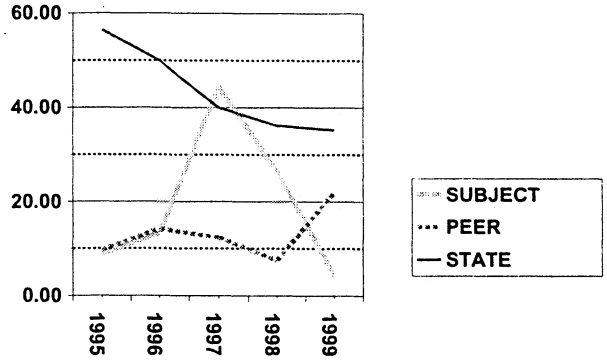
Current Year	Subject County	Peer Average	Florida	Subject County	Peer Average	Florida
1999	4.38	22.09	35.26	1	5.0	5,389

crude rate per 100,000 total population

Comparison Graph



Trend Analysis



Indicator Rate / Indicator Raw Values

Year	Subject County	Peer Average	Florida	Subject County	Peer Average	Florida
1995	8.76	9.64	56.51	2	2.0	8,013
1996	13.33	14.19	49.97	3	3.0	7,221
1997	44.50	12.30	39.99	10	2.7	5,897
1998	26.51	7.52	36.17	6	1.7	5,431
1999	4.38	22.09	35.26	1	5.0	5,389

crude rate per 100,000 total population

Healthy People 2010 : **1 per 100,000 ages 13+**

Comments : Acquired immunodeficiency syndrome is the most severe phase of infection with the human immunodeficiency virus (HIV). Persons infected with HIV are said to have AIDS when they get certain opportunistic infections or when their CD4+ cell count drops below 200

☆ Favorable Peer / Favorable State ◤ Unfavorable Peer / Unfavorable State ◯ Favorable Peer / Unfavorable State ● Unfavorable Peer / Favorable State

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Indicator Fact Sheet

Indicator : **Births to Mothers Ages 15-17 - Total**

County : **Hardee**

Peers
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Okeechobee
Holmes

Indicator Category : Maternal and Child Health

Numerator Source: Florida Vital Statistics, magnetic data tape

Denominator Source: Florida Governor's Office, on-line

Description : The rate of total births to teen mothers ages 15-17 to the total female population ages 15-17

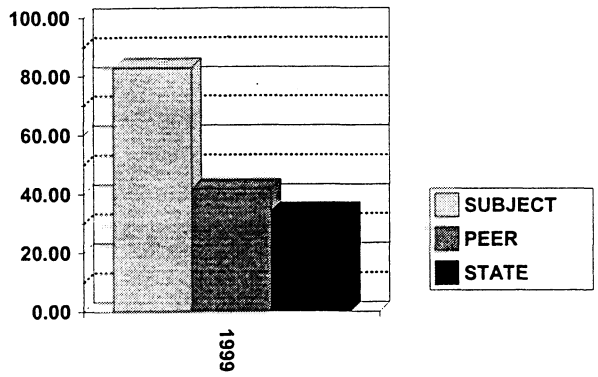
Calculation: Total births to mothers age 15-17/total female pop 15-17 x 1,000

Indicator Rate / Indicator Raw Values

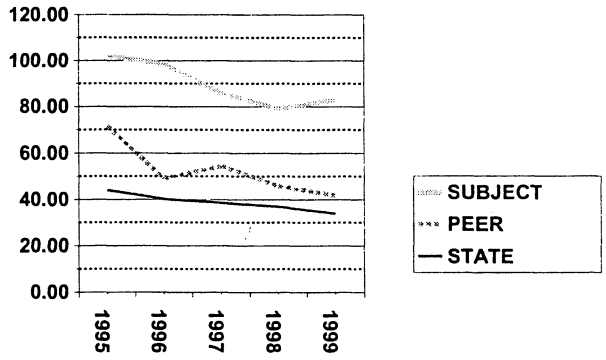
Current Year	Subject County	Peer Average	Florida	Subject County	Peer Average	Florida
1999	82.97	41.83	33.97	38	18.3	8,764

rate per 1,000 total female pop ages 15-17

Comparison Graph



Trend Analysis



Indicator Rate / Indicator Raw Values

Year	Subject County	Peer Average	Florida	Subject County	Peer Average	Florida
1995	102.06	71.68	44.17	47	27.7	9,824
1996	98.58	49.04	40.29	45	19.7	9,369
1997	85.86	54.44	38.56	39	22.7	9,376
1998	79.12	45.99	36.96	36	19.7	9,273
1999	82.97	41.83	33.97	38	18.3	8,764

rate per 1,000 total female pop ages 15-17

Healthy People 2010 : **Reduce pregnancies among females ages 15-17 to 46 pregnancies per 1000**

☆ Favorable Peer / Favorable State Unfavorable Peer / Unfavorable State ◯ Favorable Peer / Unfavorable State ● Unfavorable Peer / Favorable State

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Indicator Comparison Chart

County : Hardee

Indicator Category : Social and Mental Health

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Holmes

Favorable Peer / Favorable State

- ☆ Alcohol Dependence Hospital Admissions
- ☆ Alzheimer's Disease Hospital Admissions
- ☆ Depressive Disorders Hospital Admissions
- ☆ Psychoses Hospital Admissions
- ☆ Aggravated Assault Cases
- ☆ Alcohol Related Motor Vehicle Accidents
- ☆ Elderly Abuse: Total Confirmed Cases
- ☆ Forcible Rape Cases
- ☆ Suicide Mortality - Total
- ☆ Suicide Mortality - White
- ☆ Suicide Age Adjusted Mortality - Total
- ☆ Homicide Mortality - Other
- ☆ Suicide Mortality - Black
- ☆ Suicide Mortality - Other

Favorable Peer / Unfavorable State

- Alcohol Related Motor Vehicle Mortality

Unfavorable Peer / Favorable State

- Drug Dependence Hospital Admissions
- Simple Assault Cases
- Baker Act Hospital Admissions

Unfavorable Peer / Unfavorable State

- Burglary Cases
- Child Abuse - Total Verified Reports
- Domestic Violence Cases
- Homicide Mortality - Total
- Homicide Mortality - White
- Homicide Age Adjusted Mortality - Total
- Juvenile Delinquency Youths Referred-Total
- Juvenile Delinquency Youths Referred- White
- Juvenile Delinquency Youths Referred - Nonwhite
- Homicide Mortality - Black
- Adults Without Good Mental Health:11 or more days in last 30

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Indicator Comparison Chart

County : Hardee

Indicator Category : Health Status: Cancers

Peers
Gilchrist
Okeechobee
Holmes

Favorable Peer / Favorable State

- ☆ Breast Cancer Age Adjusted Mortality - Total
- ☆ Cervical Cancer Morbidity -Total
- ☆ Cervical Cancer Age Adjusted Mortality -Total
- ☆ Colorectal Cancer Age Adjusted Mortality - Total
- ☆ All Cancers Mortality - Black
- ☆ All Cancers Mortality - Other

Favorable Peer / Unfavorable State

- Lung Cancer Age Adjusted Mortality-Total
- Melanoma Cancer Age Adjusted Mortality - Total

Unfavorable Peer / Favorable State

- All Cancers Mortality - Total
- All Cancers Mortality - White
- Lung and Bronchus Cancer Morbidity - Total
- Prostate Cancer Morbidity - Total
- Breast Cancer Morbidity - Total Female
- Smoking Related Cancer Morbidity - Total

Unfavorable Peer / Unfavorable State

- Preventable Cancers Age Adjusted Mortality - Total
- Smoking Related Cancer Age Adjusted Mortality - Total
- All Cancers Age Adjusted Mortality - Total
- Colorectal Cancer Morbidity - Total
- Melanoma Cancer Morbidity - Total
- Prostate Cancer Age Adjusted Mortality - Total

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Indicators Matrix Report

County Name : **Hardee**

Indicator Category : **Maternal and Child Health**

Indicator Name	Year	Formula	Subject Raw Value	Peer Raw Avg Value	State Raw Value	Subject Rate	Peer Rate	State Rate	State / Peer Comparison
Repeat Births to Teens - Black	1999	rate per 1,000 black female pop ages 15-19	1	1.0	2,628	18.87	23.44	28.35	Fav Peer/Fav State
Repeat Births to Teens - Other	1999	rate per 1,000 black other pop ages 15-19	0	0.0	81	0.00	0.00	7.04	Fav Peer/Fav State
Low Birth Weight - Total	1999	% of total live births	23	16.3	16,126	5.17	5.84	8.19	Fav Peer/Fav State
Low Birth Weight - White	1999	% of white live births	20	14.3	10,116	4.80	5.46	6.91	Fav Peer/Fav State
Low Birth Weight - Black	1999	% of black live births	3	2.0	5,521	11.11	14.29	12.26	Fav Peer/Fav State
Low Birth Weight - Other	1999	% of other live births	0	0.0	489	0.00	0.00	8.72	Fav Peer/Fav State
Very Low Birth Weight - Total	1999	% of total live births	3	1.7	3,237	0.67	0.60	1.64	Unfav Peer/Fav State
Very Low Birth Weight - White	1999	% of white live births	2	1.3	1,823	0.48	0.51	1.25	Fav Peer/Fav State
Very Low Birth Weight - Black	1999	% of black live births	1	0.3	1,347	3.70	2.38	2.99	Unfav Peer/Unfav State

USF Health Sciences Center

Indicators Matrix Report

County Name : Hardee

Indicator Category : Physical and Environmental Health

Indicator Name	Year	Formula	Subject Raw Value	Peer Raw Avg Value	State Raw Value	Subject Rate	Peer Rate	State Rate	State / Peer Comparison
Campylobacter Cases	1999	crude rate per 100,000 total population	2	1.3	1,033	8.76	5.89	6.76	Unfav Peer/Unfav State
Enteric Disease - Total Cases	1999	crude rate per 100,000 total population	18	32.0	8,101	78.85	141.37	53.00	Fav Peer/Unfav State
Enteric Disease in Children < age 6 - Total Cases	1999	rate per 100,000 population < age 6	7	14.0	3,291	333.97	786.34	284.70	Fav Peer/Unfav State
Lead Poisoning - Total Cases	1999	crude rate per 100,000 total population	12	0.7	1,819	52.57	2.95	11.90	Unfav Peer/Unfav State
Salmonella Cases	1999	crude rate per 100,000 total population	5	7.7	3,143	21.90	33.87	20.56	Fav Peer/Unfav State
Shigella Cases	1999	crude rate per 100,000 total population	6	6.7	1,710	26.28	29.45	11.19	Fav Peer/Unfav State
Bicycle Fatalities	1999	crude rate per 100,000 total population	0	0.3	116	0.00	1.47	0.76	Fav Peer/Fav State
Drowning Fatalities	1999	crude rate per 100,000 total population	1	0.0	358	4.38	0.00	2.34	Unfav Peer/Unfav State
Unintentional Firearm Fatalities - Total	1999	crude rate per 100,000 total population	0	0.0	12	0.0000	0.0000	0.0785	Fav Peer/Fav State

USF University of South Florida Health Sciences Center

Ranking of Unfavorable Indicators by Category

County Name : Hardee

Indicator category : Maternal and Child Health

Indicator Name	Year	Number Affected	Efficacious Intervention	Economic Impact	Trend Direction	Score
Repeat Births to Teens - White	1999	29	Medium	High	Unfavorable	**70.12**
Repeat Births to Teens -Total	1999	30	Medium	High	Unfavorable	**69.47**
Births to Mothers Ages 15-17 - White	1999	36	High	High	Favorable	**64.55**
Births to Mothers Ages 15-17 - Total	1999	38	High	High	Favorable	**64.53**
Births to Mothers Ages < 15 - Total	1999	5	High	High	Unfavorable	**63.91**
Births to Mothers Ages < 15 - White	1999	5	High	High	Unfavorable	**63.49**
First Trimester Prenatal Care - Total	1999	303	High	Medium	Favorable	**58.86**
rst Trimester Prenatal Care - White	1999	289	High	Medium	Favorable	**58.59**
First Trimester Prenatal Care - Black	1999	13	High	Medium	Unfavorable	**53.49**
No Prenatal Care - White	1999	3	High	Medium	Favorable	**45.68**
Very Low Birth Weight - Black	1999	1	Medium	High	Favorable	**40.28**

Indicator category : Maternal and Child Health: Mortality

Indicator Name	Year	Number Affected	Efficacious Intervention	Economic Impact	Trend Direction	Score
Infant Mortality - Total	1999	4	Medium	Medium	Unfavorable	**48.59**
Infant Mortality - White	1999	4	Medium	Medium	Unfavorable	**48.07**

Note: The final score in the right-hand column is determined by the aggregation of points assigned to the five criteria: number affected, efficacious intervention, economic impact, trend direction and magnitude of difference (not shown). The indicators are then sorted by the final score with the higher priority indicators found at the top of each category.

USF University of South Florida Health Sciences Center

Ranking of Unfavorable Indicators by Category

County Name : Hardee

Indicator category : Infectious Disease

Indicator Name	Year	Number Affected	Efficacious Intervention	Economic Impact	Trend Direction	Score
Chlamydia Cases	2000	86	High	Low	Unfavorable	**65.41**
AIDS Age Adjusted Mortality - Total	1999	4	Medium	High	Favorable	**51.95**

Indicator category : Social and Mental Health

Indicator Name	Year	Number Affected	Efficacious Intervention	Economic Impact	Trend Direction	Score
Homicide Mortality - Black	1999	2	Low	High	Unfavorable	**59.02**
Domestic Violence Cases	1999	226	Low	Medium	Unfavorable	**49.97**
Burglary Cases	1999	360	Medium	Low	Favorable	**49.47**
Homicide Mortality - Total	1999	3	Low	High	Favorable	**45.43**
Child Abuse - Total Verified Reports	1999	64	Low	High	Favorable	**45.42**
Homicide Age Adjusted Mortality - Total	1999	3	Low	High	Favorable	**45.03**
Homicide Mortality - White	1999	1	Low	High	Favorable	**36.62**
Juvenile Delinquency Youths Referred - Nonwhite	1999	34	Low	Low	Unfavorable	**35.58**
Juvenile Delinquency Youths Referred-Total	1999	215	Low	Low	Favorable	**35.20**
Juvenile Delinquency Youths Referred- White	1999	181	Low	Low	Favorable	**34.48**

Note: The final score in the right-hand column is determined by the aggregation of points assigned to the five criteria: number affected, efficacious intervention, economic impact, trend direction and magnitude of difference (not shown). The indicators are then sorted by the final score with the higher priority indicators found at the of each category.

USF University of South Florida Health Sciences Center

Ranking of Unfavorable Indicators by Category

County Name : Hardee

Indicator category : Physical and Environmental Health

Indicator Name	Year	Number Affected	Efficacious Intervention	Economic Impact	Trend Direction	Score
Motor Vehicle Age Adjusted Mortality- Total	1999	13	Medium	High	Unfavorable	**64.12**
Lead Poisoning - Total Cases	1999	12	Medium	High	Favorable	**59.63**
Campylobacter Cases	1999	2	High	Medium	Favorable	**43.28**
Drowning Fatalities	1999	1	Medium	Medium	Favorable	**43.27**

Indicator category : Health Status: Cancers

Indicator Name	Year	Number Affected	Efficacious Intervention	Economic Impact	Trend Direction	Score
Melanoma Cancer Morbidity - Total	1999	6	Medium	High	Unfavorable	**64.49**
Colorectal Cancer Morbidity - Total	1999	26	Medium	High	Unfavorable	**59.66**
Preventable Cancers Age Adjusted Mortality - Total	1998	35	High	High	Favorable	**56.56**
All Cancers Age Adjusted Mortality - Total	1999	48	Medium	High	Unfavorable	**52.05**
Smoking Related Cancer Age Adjusted Mortality - Total	1998	25	Medium	High	Favorable	**47.79**
Prostate Cancer Age Adjusted Mortality - Total	1999	3	Low	High	Unfavorable	**41.22**

Note: The final score in the right-hand column is determined by the aggregation of points assigned to the five criteria: number affected, efficacious intervention, economic impact, trend direction and magnitude of difference (not shown). The indicators are then sorted by the final score with the higher priority indicators found at the top of each category.

USF University of South Florida Health Sciences Center

Ranking of Unfavorable Indicators by Category

County Name : Hardee

Indicator category : Health Status: Chronic Diseases

Indicator Name	Year	Number Affected	Efficacious Intervention	Economic Impact	Trend Direction	Score
Years of Productive Life Lost under 65 Years	1999	1,382	High	High	Favorable	**73.57**
Heart Disease Mortality - Other	1999	1	Medium	High	Unfavorable	**56.71**
Diabetes Mellitus Mortality - Black	1999	1	Medium	High	Unfavorable	**46.13**

Indicator category : Sentinel Events

Indicator Name	Year	Number Affected	Efficacious Intervention	Economic Impact	Trend Direction	Score
Diabetes - Avoidable Hospitalization	1998	27	High	High	Unfavorable	**75.47**
Asthma - Avoidable Hospitalization	1998	39	High	High	Unfavorable	**65.14**
Pneumonia - Avoidable Hospitalization	1998	152	High	High	Favorable	**62.95**
Ruptured Appendix - Avoidable Hospitalization	1998	6	High	High	Unfavorable	**55.72**

Note: The final score in the right-hand column is determined by the aggregation of points assigned to the five criteria: number affected, efficacious intervention, economic impact, trend direction and magnitude of difference (not shown). The indicators are then sorted by the final score with the higher priority indicators found at the top of each category.

USF University of South Florida Health Sciences Center

Ranking of Unfavorable Indicators

County Name : Hardee

Indicator Name	Year	Number Affected	Efficacious Intervention	Economic Impact	Trend Direction	Score
Diabetes - Avoidable Hospitalization	1998	27	High	High	Unfavorable	75.47
Years of Productive Life Lost under 65 Years	1999	1,382	High	High	Favorable	73.57
Repeat Births to Teens - White	1999	29	Medium	High	Unfavorable	70.12
Repeat Births to Teens -Total	1999	30	Medium	High	Unfavorable	69.47
Chlamydia Cases	2000	86	High	Low	Unfavorable	65.41
Asthma - Avoidable Hospitalization	1998	39	High	High	Unfavorable	65.14
Births to Mothers Ages 15-17 - White	1999	36	High	High	Favorable	64.55
Births to Mothers Ages 15-17 - Total	1999	38	High	High	Favorable	64.53
Melanoma Cancer Morbidity - Total	1999	6	Medium	High	Unfavorable	64.49
Motor Vehicle Age Adjusted Mortality- Total	1999	13	Medium	High	Unfavorable	64.12
Births to Mothers Ages < 15 - Total	1999	5	High	High	Unfavorable	63.91
Births to Mothers Ages < 15 - White	1999	5	High	High	Unfavorable	63.49
Pneumonia - Avoidable Hospitalization	1998	152	High	High	Favorable	62.95
Colorectal Cancer Morbidity - Total	1999	26	Medium	High	Unfavorable	59.66
Lead Poisoning - Total Cases	1999	12	Medium	High	Favorable	59.63
Homicide Mortality - Black	1999	2	Low	High	Unfavorable	59.02
First Trimester Prenatal Care - Total	1999	303	High	Medium	Favorable	58.86
First Trimester Prenatal Care - White	1999	289	High	Medium	Favorable	58.59

Note: The final score in the right-hand column is determined by the aggregation of points assigned to the five criteria: number affected, efficacious intervention, economic impact, trend direction and magnitude of difference (not shown). The indicators are then sorted by the final score with the higher priority indicators found at the top of each category.

USF University of South Florida Health Sciences Center

Ranking of Unfavorable Indicators

County Name : **Hardee**

Indicator Name	Year	Number Affected	Efficacious Intervention	Economic Impact	Trend Direction	Score
Heart Disease Mortality - Other	1999	1	Medium	High	Unfavorable	**56.71**
Preventable Cancers Age Adjusted Mortality - Total	1998	35	High	High	Favorable	**56.56**
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Domestic Violence Cases	1999	226	Low	Medium	Unfavorable	**49.97**
Burglary Cases	1999	360	Medium	Low	Favorable	**49.47**
Infant Mortality - Total	1999	4	Medium	Medium	Unfavorable	**48.59**
Infant Mortality - White	1999	4	Medium	Medium	Unfavorable	**48.07**
Smoking Related Cancer Age Adjusted Mortality - Total	1998	25	Medium	High	Favorable	**47.79**
Diabetes Mellitus Mortality - Black	1999	1	Medium	High	Unfavorable	**46.13**
No Prenatal Care - White	1999	3	High	Medium	Favorable	**45.68**
Homicide Mortality - Total	1999	3	Low	High	Favorable	**45.43**
Child Abuse - Total Verified Reports	1999	64	Low	High	Favorable	**45.42**
Homicide Age Adjusted Mortality - Total	1999	3	Low	High	Favorable	**45.03**
Campylobacter Cases	1999	2	High	Medium	Favorable	**43.28**
Drowning Fatalities	1999	1	Medium	Medium	Favorable	**43.27**

Note: The final score in the right-hand column is determined by the aggregation of points assigned to the five criteria: number affected, efficacious intervention, economic impact, trend direction and magnitude of difference (not shown). The indicators are then sorted by the final score with the higher priority indicators found at the top of each category.

USF University of South Florida Health Sciences Center

Ranking of Unfavorable Indicators

County Name : **Hardee**

Indicator Name	Year	Number Affected	Efficacious Intervention	Economic Impact	Trend Direction	Score
Prostate Cancer Age Adjusted Mortality - Total	1999	3	Low	High	Unfavorable	**41.22**
Very Low Birth Weight - Black	1999	1	Medium	High	Favorable	**40.28**
Homicide Mortality - White	1999	1	Low	High	Favorable	**36.62**
Juvenile Delinquency Youths Referred - Nonwhite	1999	34	Low	Low	Unfavorable	**35.58**
Juvenile Delinquency Youths Referred-Total	1999	215	Low	Low	Favorable	**35.20**
Juvenile Delinquency Youths Referred- White	1999	181	Low	Low	Favorable	**34.48**

Note: The final score in the right-hand column is determined by the aggregation of points assigned to the five criteria: number affected, efficacious intervention, economic impact, trend direction and magnitude of difference (not shown). The indicators are then sorted by the final score with the higher priority indicators found at the top of each category.

Indicator List

Demographic Characteristics
Population: total, % males, % females. Age bands: %<15, 15-24, 25-44, 45-64, >65. Median age.
Racial composition: % White, Black, Asian/Pacific Islander, Native American. Ethnicity: % Hispanic.
Live births: total, white, non-white. Deaths: total, white, non-white, Age Adjusted Mortality.
Population change, Rural population.

Socioeconomic Characteristics
Per capita income.
Employed, % unemployed. % Below poverty level: total, and families w/ children<18.
Food stamp recipients: % total population. WIC eligibles: % total population.
% Students eligible for free/reduced lunch program.
Medicaid eligibles: % total population. Medicaid births.
Health care coverage: % respondents in health plan (from BRFSS data). HMO enrollment.
Health care foregone: those who must forego care due to cost.
Dental care for low income persons: % w/ access (Health department clientele only).
High school dropouts: % of total enrollees grades 9-12.
Non-graduates of high school: % > age 24 w/o diploma.

Infectious Disease
Syphilis cases: rate total population. Congenital syphilis cases: rate for total population.
Gonorrhea cases: rate for total population. Chlamydia cases: rate for total population.
AIDS: incidence, prevalence, Age Adjusted Mortality. HIV cases.
Hepatitis A cases: rate for total population. Hepatitis B cases: rate for total population.
Meningitis cases: rate for total population. Tuberculosis: cases and AAM.
%Vaccinated by kindergarten.

Maternal and Child Health
1st trimester prenatal care and No prenatal care: % total, white, non-white.
Teen births:10-14, 15-17; rate per total, white, non-white. Repeat births to teens.
Low birthweight and Very low birthweight: % total, white, non-white live births.
Infant mortality: total, white, non-white rate per live births.
Neonatal mortality: total, white, non-white rate per live births.
Mortality due to birth defects: total, white, non-white rate population.
Child mortality: rate per population age 1-14 total, white, non-white.

Social and Mental Health
Domestic violence: rate for total population.
Child abuse/neglect: rate pop. < age 18. Elderly abuse: rate pop. > age 59.
Juvenile delinquency: rate total, white, and non-white population.
Simple assaults, Aggravated assaults, Burglary, Forcible rape: rate per total population.
Homicide and Suicide rates: age adjusted; total, white, and non-white.
Mental health admissions for Psychoses, depression, drug or alcohol dependence, Alzheimer's disease. Baker Act hospital admissions.
Mental health of adults: days w/o good mental health (from BRFSS data).
Alcohol related motor vehicle accidents/mortality

Physical Environmental Health
Salmonella, Shigella, Campylobacter cases: rate per total population.
Enteric cases: total cases per total population and cases under age 6.
Lead poisoning: rate total population.
Unintentional firearm fatalities: rate per total population.
Drowning fatalities: rate per total population.
Poisoning fatalities: rate per total population.
Bicycle fatalities: rate per total population.
Motor vehicle mortality: Age Adjusted Mortality.

Sentinel Events

Pertussis, Measles, Mumps and Rubella: rates per total population.
% Late stage cancer: cervical and breast.
Avoidable Hospitalizations – rate per total population for: Asthma, Cellulitis, Congestive heart failure, Diabetes, Gangrene, Hypokalemia, Immunizable conditions, Malignant hypertension, Perforated/bleeding ulcers, Pneumonia, Pyelonephritis and Ruptured appendix.

Health Status Indicators

Morbidity Rates for : Breast, Cervical, Colorectal, Lung & Bronchus, Prostate and Smoking related cancers; Melanoma.
Mortality - Age Adjusted Rates and crude white, nonwhite and total rates for :
All cancers, Breast, Cervical, Colorectal, and Lung cancers; Melanoma; Preventable cancers; Prostate and Smoking related cancer, Cardiovascular disease, Chronic obstructive lung disease, Chronic liver disease & cirrhosis, Diabetes mellitus, Pneumonia/influenza, and Stroke.
Years of productive life lost: # YPLL under 65 per pop.

Health Resource Availability

Medicaid physician availability: ratio Medicaid eligibles to participating physicians.
Rates per total population for: Licensed doctors, Licensed dentists, Licensed opticians, Licensed optometrists, Licensed practical nurses, Licensed registered nurses, Licensed psychologists, and Licensed pharmacists.
Licensed hospital beds and: total, acute, specialty bed rates.
Nursing home beds and CON approved nursing home beds per total population.

Behavioral Risk Factors

Utilization of Mammography, Pap Smears, Blood pressure screening and Cholesterol screening.
Check up utilization.
Smoking: current smokers, Obesity: those at risk.
Seat belt use, Child seat belt use and Child helmet usage.

APPENDIX B

MAILED SURVEY INSTRUMENT AND REPORT EXAMPLES

University of South Florida
USF

July 25, 2001

Dear Health Department Director,

We at the Center for Health Outcomes Research would like to invite you to participate in an evaluation of a research project that has been conducted at the University of South Florida since 1998. This project has been sponsored by the Technologies Opportunities Program of the U.S. Department of Commerce. The primary goal of the project was to design and build a data warehouse at USF to permit the housing and analysis of large health-related databases. A second goal was to generate automated reports from the warehouse for use in community health needs assessments for Florida counties.

The warehouse construction is complete and we are now in the field-testing and evaluation phase. We would like to have input regarding our reports from someone at your agency, preferably someone involved in health planning. Please look over the enclosed survey, identify the appropriate employee to complete the survey, and pass it along to that person. We are hoping to have a two-week turn around time, so we ask that the survey be completed as soon as possible and returned in the envelope provided. We estimate that the survey will take 30-40 minutes to complete. We would also ask that you complete the back of the postcard provided with the name, title and phone number of the employee you pass the survey on to, so that we know who to call should we have any questions after the survey is returned.

Data are being collected for research purposes only and will be shared only in aggregate form. If you are interested in the results of this study, have any questions about the enclosed survey, or would like information about how to receive community health status and needs assessment data for your county, please contact me or the Center staff at (813) 974-6652. Thank you for your time.

Sincerely,

James Studnicki

James Studnicki, Sc.D., Director
Center for Health Outcomes Research
Principal Investigator, TOP Project

Enclosures:
Postcard, Envelope with letter, survey and return envelope.

Center for Health Outcomes Research, Health Sciences Center
University of South Florida • 13201 Bruce B. Downs Blvd., MDC 56 • Tampa, Florida 33612-3805
James Studnicki, Sc.D., Director (813) 974-6653 • FAX (813) 974-7807

University of South Florida
USF

Dear Survey Respondent,

Please read the following information before completing the enclosed survey. It contains information that will help you understand the methodology used to develop the report that is discussed in the survey.

Comprehensive Assessment for Tracking Community Health (CATCH) is a health assessment methodology developed by Dr. James Studnicki at the USF Center for Health Outcomes Research. The CATCH process utilizes health data captured from multiple sources to compile, analyze and prioritize a community's health problems utilizing peer-compared data. The methodology has been employed in 15 Florida counties since 1991.

In 1998, the U.S. Department of Commerce, Technology Opportunities Program (TOP) commissioned the Center to begin a project to automate the CATCH process. Project goals include the development of a data warehouse to store and analyze large health databases, and automation of community health assessment reports. At this time, the warehouse construction is complete and we are testing the utility of the warehouse-generated reports in the field. The enclosed survey asks for your feedback on these reports.

The overview of the CATCH project on the next page contains information that will be helpful to you in understanding the reports. Please take a few moments to look it over.

When you have completed the survey, please send it back in the return envelope provided as soon as possible. Thank you for your assistance.

Sincerely,

Barbara Steverson

Barbara Steverson, RN, MHA
Research Coordinator

Please return only pages 1, 4, and 6 of the survey in the envelope provided. Thank you for your time.

Center for Health Outcomes Research, Health Sciences Center
University of South Florida • 13201 Bruce B. Downs Blvd., MDC 56 • Tampa, Florida 33612-3805
James Studnicki, Sc.D., Director (813) 974-6653 • FAX (813) 974-7807

Overview

- The methodology organizes over 200 health and social indicators into the ten indicator groups shown below. For example, the indicator "tuberculosis cases" would be found under the infectious disease category.

Demographics	Social/mental health	Sentinel Events
Socioeconomics	Physical/Environmental	Health Resources
Maternal/Child	Health Status	Behavioral Risk Factors
Infectious Disease		

- The methodology then compares the value of each indicator for your county to two other comparison values: the peer average and the state average. For example, it would compare your county's rate for heart disease to the peer average and the state average for heart disease.

- The peer average is composed of the average of 3 "peer" counties' values. Health services research literature show that the age, race and poverty are the variables that explain most of the differences in health statu between communities. Therefore, the peer counties are selected using the following criteria:

% under age 18	% families with children < age 18 in poverty
% over age 64	% nonwhite population

The results of comparing subject county values to peer and state values are then displayed in an indicator comparison chart such as Figure 1.

Figure 1. Indicator Comparison Chart

Favorable Peer, Favorable State Indicators which are favorable when compared to the Peer, and favorable when compared to the State	**Favorable Peer, Unfavorable State** Indicators which are favorable when compared to the Peer, and unfavorable when compared to the State
Unfavorable Peer, Favorable State Indicators which are unfavorable when compared to the Peer, and favorable when compared to the State	**Unfavorable Peer, UnFavorable State** Indicators which are unfavorable when compared to the Peer, and unfavorable when compared to the State

One of the reports you will be asked to provide feedback on is the indicator comparison chart. You will also be asked about the list of indicators used, and a "Fact sheet", which contains all the information collected about that indicator.

Please proceed to the survey at this time.

Technologies Opportunities Program (TOP) Project
Field Test of Automated Community Health Status Report

The answers to the general questions below will be used for research classification only. Answers will be aggregated with all respondents' surveys – your answers will not be identified with you.

I. General questions

1. Your title or primary job responsibility is

   _____.

2. Number of years with this agency or in same business _____.

3. Are you directly involved in health planning? In what way?

   _____

   _____.

II. Indicator questions

Before answering questions 4 through 10, please look at the "Indicator List" on the following page. These are the indicators that would be included in a comprehensive community health status assessment.

	Not Useful				Very Useful
4. The health indicators on the indicator list are useful.	1	2	3	4	5
5. The set of health indicators is complete.	1	2	3	4	5
6. The category titles are useful; they make it easy to understand which indicators would be available in that category.	1	2	3	4	5
7. Newer data are sometimes available on a provisional basis (but data are not guaranteed to be clean or complete). Would newer provisional data (e.g., 1 year old data) would be more useful than final data (e.g., two years old, but clean and complete).	1	2	3	4	5

8. Are there any other indicators you'd prefer to see? Where would you obtain these data?

   _____

9. Are there any indicators you would delete from the report?

   _____

10. Are there any indicators you might want to see in a time frame other than annually (quarterly, monthly. etc.)?

    _____

Indicator List – Use to answer questions 1-7

Demographic Characteristics
Population: total, % males, % females. Age bands: %<15, 15-24, 25-44, 45-64, >65. Median age.
Racial composition: % White, Black, Asian/Pacific Islander, Native American. Ethnicity: % Hispanic.
Live births: total, white, non-white. Deaths: total, white, non-white, Age Adjusted Mortality.
Population change, Rural population.

Socioeconomic Characteristics
Per capita income.
Employed, % unemployed. % Below poverty level: total, and families w/ children<18.
Food stamp recipients: % total population. WIC eligibles: % total population.
% Students eligible for free/reduced lunch program.
Medicaid eligibles: % total population. Medicaid births.
Health care coverage: % respondents in health plan (from BRFSS data). HMO enrollment.
Health care foregone: those who must forego care due to cost.
Dental care for low income persons: % w/ access (Health department clientele only).
High school dropouts: % of total enrollees grades 9-12.
Non-graduates of high school: % > age 24 w/o diploma.

Infectious Disease
Syphilis cases: rate total population. Congenital syphilis cases: rate for total population.
Gonorrhea cases: rate for total population. Chlamydia cases: rate for total population.
AIDS: incidence, prevalence, Age Adjusted Mortality. HIV cases.
Hepatitis A cases: rate for total population. Hepatitis B cases: rate for total population.
Meningitis cases: rate for total population. Tuberculosis: cases and AAM.
%Vaccinated by kindergarten.

Maternal and Child Health
1st trimester prenatal care and No prenatal care: % total, white, non-white.
Teen births:10-14, 15-17; rate per total, white, non-white. Repeat births to teens.
Low birthweight and Very low birthweight: % total, white, non-white live births.
Infant mortality: total, white, non-white rate per live births.
Neonatal mortality: total, white, non-white rate per live births.
Mortality due to birth defects: total, white, non-white rate population.
Child mortality: rate per population age 1-14 total, white, non-white.

Social and Mental Health
Domestic violence: rate for total population.
Child abuse/neglect: rate pop. < age 18. Elderly abuse: rate pop. > age 59.
Juvenile delinquency: rate total, white, and non-white population.
Simple assaults, Aggravated assaults, Burglary, Forcible rape: rate per total population.
Homicide and Suicide rates: age adjusted; total, white, and non-white.
Mental health admissions for Psychoses, depression, drug or alcohol dependence, Alzheimer's disease. Baker Act hospital admissions.
Mental health of adults: days w/o good mental health (from BRFSS data).
Alcohol related motor vehicle accidents/mortality

Physical Environmental Health
Salmonella, Shigella, Campylobacter cases: rate per total population.
Enteric cases: total cases per total population and cases under age 6.
Lead poisoning: rate total population.
Unintentional firearm fatalities: rate per total population.
Drowning fatalities: rate per total population.
Poisoning fatalities: rate per total population.
Bicycle fatalities: rate per total population.
Motor vehicle mortality: Age Adjusted Mortality.

Sentinel Events

Pertussis, Measles, Mumps and Rubella: rates per total population.
% Late stage cancer: cervical and breast.
Avoidable Hospitalizations – rate per total population for: Asthma, Cellulitis, Congestive heart failure, Diabetes, Gangrene, Hypokalemia, Immunizable conditions, Malignant hypertension, Perforated/bleeding ulcers, Pneumonia, Pyelonephritis and Ruptured appendix.

Health Status Indicators

Morbidity Rates for : Breast, Cervical, Colorectal, Lung & Bronchus, Prostate and Smoking related cancers; Melanoma.
Mortality - Age Adjusted Rates and crude white, nonwhite and total rates for :
All cancers, Breast, Cervical, Colorectal, and Lung cancers; Melanoma; Preventable cancers; Prostate and Smoking related cancer, Cardiovascular disease, Chronic obstructive lung disease, Chronic liver disease & cirrhosis, Diabetes mellitus, Pneumonia/influenza, and Stroke.
Years of productive life lost: # YPLL under 65 per pop.

Health Resource Availability

Medicaid physician availability: ratio Medicaid eligibles to participating physicians.
Rates per total population for: Licensed doctors, Licensed dentists, Licensed opticians, Licensed optometrists, Licensed practical nurses, Licensed registered nurses, Licensed psychologists, and Licensed pharmacists.
Licensed hospital beds and: total, acute, specialty bed rates.
Nursing home beds and CON approved nursing home beds per total population.

Behavioral Risk Factors

Utilization of Mammography, Pap Smears, Blood pressure screening and Cholesterol screening.
Check up utilization.
Smoking: current smokers, Obesity: those at risk.
Seat belt use, Child seat belt use and Child helmet usage.

III. Indicator Fact Sheet questions

To answer these questions, please refer to the form titled " Indicator Fact Sheet".

	Not Useful				Very Useful
11. How useful do you find the information on this page?	1	2	3	4	5
12. How useful do you find the current comparative data?	1	2	3	4	5
13. How useful do you find the historical (trend) data?	1	2	3	4	5

14. Is there anything you would add or eliminate from the descriptive information at the top of the page?

_____

15. Is a national standard or goal such as the Healthy People 2010 goal useful?

_____

16. Do you have any other comments about this page?

_____

Health Sciences Center

Indicator Fact Sheet

Indicator : First Trimester Prenatal Care - Total ☆

County : Hillsborough

Indicator Category :	Maternal and Child Health
Numerator Source:	Florida Vital Statistics
Denominator Source:	Florida Vital Statistics
Description :	Births to all mothers who indicated they received prenatal care (PNC) during their first three months of pregnancy
Calculation :	Total live births with first trimester prenatal care/total live births x 100

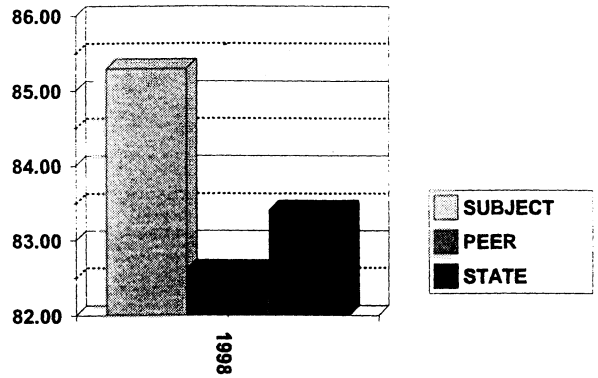
Peers
Duval
Orange
Polk

Indicator Rate / Indicator Raw Values

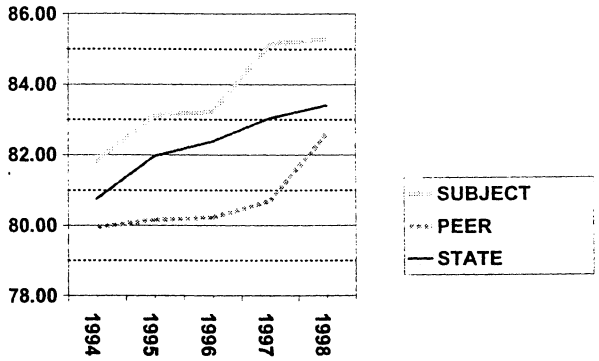
Current Year	Subject County	Peer Average	Florida	Subject County	Peer Average	Florida
1998	85.30	82.61	83.41	12,203	8,402	158,969

% of total live births

Comparison Graph



Trend Analysis



Indicator Rate / Indicator Raw Values

Year	Subject County	Peer Average	Florida	Subject County	Peer Average	Florida
1994	81.83	79.95	80.75	11,161	7,903	153,111
1995	83.13	80.16	81.97	11,186	7,815	154,325
1996	83.22	80.23	82.38	11,345	7,952	155,747
1997	85.15	80.70	83.03	11,785	8,261	159,175
1998	85.30	82.61	83.41	12,203	8,402	158,969

% of total live births

Healthy People 2010 : **90% receive care in 1st trimester**

IV. Indicator Comparison Charts

To answer these questions, please refer to the " Indicator Comparison Chart" on the next page.

	Not Useful				Very Useful
17. How useful is this chart in identifying problem indicators?	1	2	3	4	5
18. Do you find the symbols and labeling clear?	1	2	3	4	5

19. Any other comments about this report (page)?

_____

_____

Health Sciences Center

Indicator Comparison Chart

County : Hillsborough

Indicator Category : Health Status

- ☆ Favorable Peer / Favorable State
- Favorable Peer / Unfavorable State
- ● Unfavorable Peer / Favorable State
- Unfavorable Peer / Unfavorable State

☆ All Cancers Mortality - Nonwhite ☆ All Cancers Mortality - Total ☆ All Cancers Mortality - White ☆ Chronic Liver Disease & Cirrhosis AA Mortality- Total ☆ Chronic Liver Disease & Cirrhosis Mortality- Total ☆ Chronic Liver Disease & Cirrhosis Mortality- White ☆ Pneumonia/Influenza Age Adjusted Mortality - Total ☆ Pneumonia/Influenza Mortality - Nonwhite ☆ Pneumonia/Influenza Mortality - Total ☆ Pneumonia/Influenza Mortality - White ☆ Stroke Mortality - Nonwhite ☆ Melanoma Cancer Age Adjusted Mortality - Total	All Cancers Age Adjusted Mortality - Total Breast Cancer Age Adjusted Mortality - Total Lung Cancer Age Adjusted Mortality-Total Cervical Cancer Age Adjusted Mortality -Total Colorectal Cancer Age Adjusted Mortality - Total Preventable Cancers Age Adjusted Mortality - Total Prostate Cancer Age Adjusted Mortality - Total Smoking Related Cancer Age Adjusted Mortality - Total
● Diabetes Mellitus Mortality - White ● Stroke Mortality - Total ● Stroke Mortality - White	Diabetes Mellitus Mortality - Nonwhite Diabetes Mellitus Mortality - Total Diabetes Mellitus Age Adjusted Mortality - Total Chronic Liver Disease & Cirrhosis Mortality- Nonwhite Stroke Age Adjusted Mortality - Total Years of Productive Life Lost under 65 Years Cardiovascular Diseases Age Adjusted Mortality - Total

Thank you for your time. It is much appreciated. Please return all forms to:

Barbara Steverson, Research Coordinator
USF Center for Health Outcomes Research
13201 Bruce B. Downs Blvd., MDC 56
Tampa, FL 33612-3805

University of South Florida
USF

August 10, 2001

Dear Health Department Director,

About two weeks ago, we sent you a questionnaire that was part of our research at the Center for Health Outcomes Research that we asked you to help us with. As you may recall, we asked you to pass the survey on to the person in your organization most familiar with health assessments and planning activities. We also asked you to write that person's name and phone number on the enclosed postcard so we could follow-up with any questions after the survey was completed. If you have already sent the postcard or completed survey back to us, thank you for your prompt response.

If you have not yet passed this survey on, and mailed the postcard, please do so today, if possible. Our study has time limits and we would appreciate your participation. We understand that your time is valuable and limited, too. Therefore, we want to extend our appreciation to your and your staff for your participation in this important study, which will benefit Florida counties seeking health planning data in the future.

The survey data are being collected for research purposes only and will be shared only in aggregate form. Your health department will not be identified with any specific results. If you are interested in the results of this study, have any questions about the enclosed survey, or would like information about how to receive community health status and needs assessment data for your county, please contact me or the Center staff at (813) 974-6652. Thank you again for your participation in this valuable study.

Sincerely,

James Studnicki

James Studnicki, Sc.D., Director
Center for Health Outcomes Research
Principal Investigator, TOP Project

Center for Health Outcomes Research, Health Sciences Center
University of South Florida • 13201 Bruce B. Downs Blvd., MDC 56 • Tampa, Florida 33612-3805
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APPENDIX C

ON-SITE SURVEY SUMMARIES OF QUALITATIVE DATA

Hillsborough/Pinellas Field Test Summary of Comments

Eleven task force members participated in the field test.

Fact Sheets:

1. All trend and current year graphs should start at zero (D. Berndt said this was possible and acknowledged that it was preferable).
2. Graphic scales should be consistent.
3. Include state goals as another reference point (found in the on-line PHIDS); keep HP 2010. Districts also have goals.
4. For Chlamydia cases, the number of tests might be a better denominator than population.
5. Use all quadrant symbols next to indicator name, not just star and flag.
6. Spell out all acronyms – including PHIDS, DOH, etc.
7. List exact source and time frame.
8. Add the time period (month and year) for numerator and denominator source – e.g., PHIDS CD-ROM, April 98.
9. State whether data is calendar year data or not (especially PHIDS data)
10. Would like to see nonwhite split into Black, Hispanic and others.
11. Clearly distinguish nonwhite by adding Black and Hispanic notations.
12. Specify if white/nonwhite is exclusive or inclusive of Hispanic.
13. A standard deviation measurement would be of value.
14. The currency of the data is an issue.
15. Be sure color graphs print OK in black and white.

Indicator Comparison Chart (2x2):

1. Want to see words in each quadrant: favorable/ unfavorable, etc., not just symbols.
2. Symbols and legend at bottom.
3. Want peers listed on each page of 2x2.
4. Don't like ovals – another symbol is needed.
5. We should view the entire right side as a problem, not just the bottom right quadrant.
6. They like quadrant views as a "quick" way to identify problems.
7. Note to CATCH team: the group was not shown a master 2x2.
8. They would like to see indicators listed in quadrant in priority order, along with a final score number.

Matrix:

1. In far right column named "state/peer comparison, it currently reads favorable peer, unfavorable state, etc. They would like to add the corresponding symbol here.
2. They like the matrix, especially splitting the indicators into categories (demo, socio, etc.).
3. Having raw value is very important.
4. Age Adjusted Mortality is more important than the raw value.

5. Add average adjusted death rate (a weighted average) to the discussion in narrative.
6.

Priority List (PL):

Note - Priority List I was organized by separate category (MCH, health status, etc. P.L.II was all indicators in one category, organized by rank. Both used simplified format with yr, # affected, trend direction and score.

1. If using PL II, add column for domain (MCH, health status, etc.)
2. Go back to original format with all the detail!
3. In simplified format, the final score is not able to be traced back to individual scores, and is of less value.
4. List the 5 prioritization criteria on the PL form.
5. Like PL II better.
6. Like both PL I and II (Almost all said this).
7. Would use both at different times.
8. Could use PL II with a separate column to indicate category.
9. On Indicator comparison chart, (2x2), could put indicators as they are ranked in quadrant 4, along with score.
10. Preference is for PL I but PLII should be an option.
11. PL I more useful in planning when grouped.
12. Take out score or put an * at bottom and explain what it means.

Indicator List:

1. Add risk screening for pregnancy – available since '92, with Vital Stats/ Healthy start
2. Add Hepatitis C
3. Report STDs by age bands, gender and race
4. Get smoking indicator from Youth Behav. Risk Survey
5. Get active physicians
6. Add ER data
7. Put Teen births 15-19 back in
8. Put waterborne and foodborne back in, both suspected and confirmed.
9. Instead of animal rabies, add the # of people given rabies immunization shots, post exposure.
10. For health professionals, use "active" practitioners only.
11. Add the whole Youth BRF survey – this is regional.
12. Add more mental health indicators.
13. Delete ruptured appendix, AH (one person's comment).

General:

1. Report Hispanic numbers where available.
2. Group prefers white, black, other to white, nonwhite.

3. A national value of comparison would be helpful.
4. Some participants question our decision to view MORE hospital and nursing home beds as FAVORABLE.
5. Participants' question: shouldn't we have a numeric standard to determine favorable/unfavorable, instead of just < or > ? This would solve problem where an indicator is only worse by a tenth or a hundredth.
6. Provisional data is good, but must be labeled as such.
7. Add index tabs by category or disease.
8. Put report on-line.

Dade Field Test Comments

Four task force members participated in the field test.

1. **They would like to add these indicators:**
   - Developmental disabilities
   - Indicators by type of payer, especially how much Medicaid invests in each disease
   - QUALYs (quality life years)
   - Number of immigrants (from INS)
   - Maternal/child data by Hispanic groups and other ethnic categories

2. **Indicator comparison chart (2x2s)**
   - Not sure of validity of comparison
   - It is useful

3. **Matrix**
   - No comments

4. **Fact Sheets**
   - Eliminate The description based on state definitions
   - Give a more detailed description of what the indicator is
   - Add U.S. rates
   - Like the HP 2010 goal

5. **Priority List**
   - Prefer Priority List #1 (more detailed list from Miami-Dade report)
   - Prefer Priority List #2 (less detailed from Hillsborough report)
   - Not sure which is better
   - Like both

Escambia/ Santa Rosa Field Test Comments

Five members of task force participated in the field test.

Fact Sheets

- The "bottom line" of data is most important – includes current and trend data – don't need separate line at top.
- Some audiences like numbers, others like graphs
- HP 2010 goal is useful
- Eliminate indicator summary bar – all else great
- Enlarge symbols – when 1st using report you don't see them right away

Indicator Comparison Chart (2x2s)

- Data warehouse generated 2x2 is easier to read than manually generated
- Put labels in each quadrant (favorable/unfavorable, etc.)
- Ovals hard to read. Put meaning of symbol on the top of each quadrant box
- Placement of 2x2 may need to be changed for other customers for easier reference
- Slightly smaller print would be easier to read

Matrix

- Put symbols in last column as well as description
- Prefer to work with 2x2s, then fact sheets, use matrix last(in terms of order of use)
- Is useful for specialty groups

Priority List

- Change title of prioritized to "highest concerns" or "rank ordered" or "rank ordered problem list"
- Prefer #2 (least crowded)
- Our audiences would prefer Priority List #2
- Volume is an issue – should be more of a weighted factor
- Needs an adjustment for volume
- Priority List needs more explanation for 1st time users
- "Priority" implies that decisions are already made by USF as to what our priorities should be
- Participants in the "exercise" will not understand how that translates into the priority list – need something on the Priority List page to remedy this
- "Priority" gives impression that the group's priorities are already set – use different terminology
- Lists are helpful but confusing to the public
- We didn't know when we selected criteria how it would show up

Indicator List

- Add Youth behavior risk data (Florida Youth Substance Abuse Survey)
- Add geriatric data
- Add air quality, coastal water quality (from DEP)
- Need more mental health indicators
- Add Hepatitis C
- Don't use provisional data

General Comments

- The title "Physical Environmental Health" is worrisome – can we change title of this category?
- Can use provisional but identify it as such
- The report is too complicated for most people
- We would like to receive data on disk
- Report is overwhelming
- Need a smaller companion piece highlighting findings with a brief glossary explaining terms like AAM, YPLL, Health care foregone, etc.

Leon County Field Test Summary

Nine task force members participated in the field test.

Fact sheet comments/suggestions:

1. Spell out the acronym PHIDS
2. Florida Governor's Office – give more detail as to the exact dept. in this source
3. Consider changing the "Indicator Raw Values" to "Number of cases" or "# of deaths" – for more clarity
4. Under the description section – identify more risk factors in this section.
5. In the HP2010 goal section – add the word "cases" after the value
6. Add the State Dept. of Health goal as well as the HP 2010 goal
7. Change the filled-in oval symbol to a diamond or triangle symbol

Indicator Comparison Chart (2x2) suggestions:

1. Add a symbol key to bottom of chart
2. Add the words "rate" or "percentage" to indicator title

Indicator Matrix \ suggestions:

1. Change title of "raw value" column to "cases"

Priority List suggestions:

1. Keep the score rather than delete it

Indicator List and general suggestions:

1. Get insured values from the Agency for Healthcare Administration instead of using the indicator "health care coverage" from the Behavioral Risk Factor Surveillance Survey
2. If data re provided every year,, then provisional data are OK. But if a CATCH study is done only every few years, then making the data more complete and accurate is more important.

Hardee County Field Test Summary

Four members of task force participated in the field test.

Fact sheet comments/suggestions:

1. Under box containing 5 years of rates toward bottom of page, need to make the rate explanation stand out more "crude rate per 100,000 population" – bold or larger font

Indicator Comparison Chart (2x2) suggestions:

1. Keep as is.

Indicator Matrix \ suggestions:

1. No suggestions/comments.

Priority List suggestions:

1. This area is very important and needs greater discussion about its meaning, especially in smaller counties where the "small numbers problems" occur
2. A quantitative score is questionable and misleading in a small setting like this

Indicator List and general suggestions:

1. Delete BRFSS indicators for small counties